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Vol. I

TRANSCRIPT OF RECORD

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Supreme Court of the United States

OCTOBER TERM, 1951

No. 301

THE PALMER OIL CORPORATION, PAUL STERBA AND PAUL STERBA, JR., A MINOR, ETC., APPELLANTS,

vs.

AMERADA PETROLEUM CORPORATION, ET AL.

No. 302

KIT C. FARWELL, FRANK PHOHLEMANN, L. A. DAVIS, ET AL., APPELLANTS,

vs.

AMERADA PETROLEUM CORPORATION, ET AL.

APPEALS FROM THE SUPREME COURT OF THE STATE OF OKLAHOMA

FILED SEPTEMBER 4, 1951

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APPEALS FROM THE SUPREME COURT OF THE STATE OF OKLAHOMA

VOL. I

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[fol. 1] [File endorsement omitted]

IN THE SUPREME COURT OF THE STATE OF OKLAHOMA

No. 33708

PAUL STERBA and PAUL STERBA, JR., a Minor, by and Through His Father and Next Friend, Paul Sterba, and The Palmer Oil Corporation, a Corporation, Petitioners,

vs.

CORPORATION COMMISSION OF OKLAHOMA, Consisting of Reford Bond, Ray O. Weems and Ray C. Jones; Phillips Petroleum Company, a Corporation; Amerada Petroleum Corporation, a Corporation; Anderson-Prichard Oil Corporation, a Corporation; Ray Stephens, Inc., a Corporation; Stephens Petroleum Company, a Corporation; Gulf Oil Corporation, a Corporation; Magnolia Petroleum Company, a Corporation; Cities Service Oil Company, a Corporation; Foster Petroleum Corporation, a Corporation; and Sunray Oil Corporation, a Corporation, Defendants

APPLICATION TO ASSUME ORIGINAL JURISDICTION—Filed July 1, 1948

Come now, Paul Sterba and Paul Sterba, Jr., a minor, by and through his father and next friend, Paul Sterba, and The Palmer Oil Corporation, and respectfully pray this Court to assume jurisdiction in an original proceeding under the petition for a Writ of Prohibition and other proper relief, copy of which petition is attached hereto, for the following reasons:

[fol. 2] First: That the relief sought is against the Corporation Commission of the State of Oklahoma, and other defendants above named, who are acting as a "Unit Committee" under the jurisdiction of said Commission, to prevent and prohibit the enforcement of the Commission's Order No. 20289, which purported to create the "West Cement Medrano Unit" of the West Cement Field of Caddo

County, Oklahoma, pursuant to House Bill No. 339 of the 1945 Oklahoma Legislature (O. S. Supp. 1947, Title 52, Sec. 286.1 to 286.17.)

Second: That the action of the "Commission" and the "Unit Committee" is without authority of law and has been and will continue to be acts of judicial nature which are excessive, arbitrary and unreasonable, and that the applicants herein have suffered and will continue to suffer irreparable injury and damages.

Third: That the questions involved in said petition are of great public interest and that applicants have no speedy or adequate remedy in the State Court, Federal Court, or before the Commission to prevent their irreparable injury and damage.

Brief in support of this application and the petition referred to are filed herewith.

Claude Monet, Coleman H. Hayes, Mart Brown, Mark H. Adams, Charles E. Jones, William I. Robinson, by Coleman Hayes, Attorneys for petitioners.

[fol. 3] Address of Attorneys: Claude Monnet, Coleman H. Hayes, Mart Brown, 1719 First National Bank Building, Oklahoma City, Oklahoma; Mark H. Adams, Charles E. Jones, William I. Robinson, 1008 Brown Building, Wichita, Kansas.

[fol. 4] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

No. 33708

[Title omitted]

PETITION FOR WRIT OF PROHIBITION OR OTHER PROPER RELIEF —Filed July 1, 1948

Come now Paul Sterba, Paul Sterba, Jr., a minor by and through his father and next friend, Paul Sterba, and [fol. 5] The Palmer Oil Corporation, petitioners herein,

and respectfully represent and show to this Honorable Court as follows:

First: That your petitioners, Paul Sterba and Paul Sterba, Jr., a minor, are residents of Ponca City, Kay County, Oklahoma, and will hereinafter be referred to as "Sterbas"; that petitioner, The Palmer Oil Corporation, is a corporation duly organized and existing under the laws of the State of Kansas and licensed to transact business within the State of Oklahoma and will be hereinafter referred to as "Palmer."

That the defendants, Reford Bond, Ray O. Weems and Ray C. Jones are the duly elected, qualified and acting Commissioners of the Corporation Commission of Oklahoma and as such constitute and will be hereinafter referred to as the "Commission." That the defendants, Phillips Petroleum Company, Amerada Petroleum Corporation, Ray Stephens, Inc., Stephens Petroleum Company, Cities Service Oil Company, Sunray Oil Corporation and Foster Petroleum Corporation are each corporations duly organized and existing under and by virtue of the laws of the State of Delaware and are each duly licensed to transact business within the State of Oklahoma; that the defendant, Anderson-Prichard Oil Corporation is duly organized and existing under and by virtue of the laws of the State of Delaware and the State of Oklahoma and is licensed to transact business within the State of Oklahoma; that the defendant, Gulf Oil Corporation, is duly organized and existing under and by virtue of the laws of the State of Pennsylvania and is duly licensed to transact business within the State of Oklahoma; that the defendant, Magnolia Petroleum Company, is duly organized and existing under and by virtue of the laws of the State of Texas [fol. 6] and is duly licensed to transact business within the State of Oklahoma; that the name and address of the resident agents of said defendant corporations are as follows:

Phillips Petroleum Company, Bruce McClelland, Jr., Hightower Building, Oklahoma City, Oklahoma;

Amerada Petroleum Corporation, George M. Green, 735 First National Bldg., Oklahoma City, Oklahoma;

Anderson-Prichard Oil Corporation, T. H. Marshall, 1000 Apco Tower, Oklahoma City, Oklahoma;

Ray Stephens, Inc., H. G. Stephens, 2600 Apco Tower, Oklahoma City, Oklahoma;

Stephens Petroleum Company, Waldo E. Stephens, 2600 Apco Tower, Oklahoma City, Oklahoma;

Gulf Oil Corporation, Katherine Manton, 1517 N.W. 20th, Oklahoma City, Oklahoma;

Magnolia Petroleum Company, W. R. Wallace, 7th and Broadway, Oklahoma City, Oklahoma;

Cities Service Oil Company, B. A. Ames, First National Building, Oklahoma City, Oklahoma;

Foster Petroleum Corporation, Katherine Manton, 1517 N.W. 20th, Oklahoma City, Oklahoma;

Sunray Oil Corporation, Edward Howell, 2420 First National Bldg., Oklahoma City, Oklahoma.

That said defendant corporations above named comprise the purported operating committee of the so-called West Cement Medrano Unit as purportedly created and established by the Commission under and by virtue of its order [fol. 7] No. 20289 entered September 5, 1947, and that said corporation so comprising said committee will be hereinafter referred to as "Committee."

Second: That "Sterbas," petitioners herein, are the owners as tenants in common, Paul Sterba owning an undivided ¾ths interest and Paul Sterba, Jr., a minor, owning an undivided ¼th interest, of the following described real estate in Caddo County, Oklahoma:

> The Southwest Quarter (SW¼) of Section Thirty-five (35) Township Six (6) North, Range Ten (10) West.

That heretofore and on or about February 12, 1936, the then owners of the above described real estate, Paul Sterba and his wife, Gertrude K. Sterba, and his sister, Helen Sterba Jackson, and her husband, Clifford Jackson, made, executed and delivered, as lessors, to Chris Pearson, as lessee, an oil and gas lease covering said real estate, said lease being recorded in Book 75, page 316, in the Office of the County Clerk of said County and State, which by reference thereto is made a part hereof; that among other terms

and provisions of said oil and gas lease, the lessee therein or his assigns covenanted to deliver to the credit of the lessors, free of cost, in the pipe line to which the lessee may connect wells on said land, the equal one-eighth part of all oil produced and saved from said leased premises. Said lessee and his assigns further covenanted to pay to lessors one-eighth of the gross proceeds of gas produced at the prevailing market rate for gas.

That thereafter, and on or about the 15th day of February, 1936, said Chris Pearson transferred all of his interest in and to said oil and gas lease to defendant, Gulf Oil Cor- [fol. 8] poration, which assignment is recorded in Book 75 Misc. page 319, in the Office of the County Clerk in said County and State, which by reference thereto is made a part hereof.

Third: That on or about the 6th day of September, 1938, the Gulf Oil Corporation entered into a written contract with "Palmer" under the terms of which Gulf Oil Corporation agreed to assign to "Palmer" all of its interest in and to said oil and gas lease to a depth of 6000 feet provided "Palmer" would within thirty (30) days commence drilling operations for a test well in the Northeast Quarter (NE¼) of the Northeast Quarter (NE¼) of said Southwest Quarter (SW¼) of said Section Thirty-five (35), and with diligence and dispatch drill said well to a total depth of 6000 feet, unless oil, gas or either of them or igneous rock or other impenetrable substance was encountered at a lesser depth; that said contract is recorded in the Office of the County Clerk in said County and State in Book 83, page 379, and by reference made a part hereof.

Fourth: That "Palmer" duly performed all terms and conditions of said contract by drilling and completing an oil and gas test well as a commercial producer on or about October 13, 1938 at the location above designated, said well being known as the Palmer-Sterba No. 1 well and being completed in what is commonly known as the Niles Sand at a total depth of 3545 feet.

That on December 6, 1938 Gulf Oil Corporation assigned and set over unto "Palmer" the aforedescribed oil and gas lease to a depth of 6000 feet, all as provided in said con- [fol. 9] tract of assignment, said assignment being filed in

the Office of the County Clerk and recorded in Book 84, page 214, Caddo County, Oklahoma, and by reference thereto is made a part hereof.

Fifth: That thereafter and on the 5th day of May, 1939, "Palmer" drilled and completed a Palmer-Sterba Well No. 2 at a location in the Northeast Quarter of the Northwest Quarter of the Northwest Quarter of the Southwest Quarter of said Section Thirty-five, which well is producing from the Rowe Sand at a total depth of 3401 feet; that thereafter and on the 31st day of October, 1940, "Palmer" drilled and completed as a producer of gas in commercial quantities Palmer-Sterba No. 3 well at a location in the Northwest Quarter of the Northwest Quarter of the Southwest Quarter of said Section Thirty-five, from what is commonly known as the Medrano Sand at a total depth of 5260 feet; that thereafter and on or about the 5th day of June, 1943, "Palmer" drilled and completed as a producer of oil in commercial quantities Palmer-Sterba Well No. 4, at a location in the Southeast Quarter of the Southeast Quarter of the Southwest Quarter of said Section Thirty-five, from what is commonly known as the Medrano Sand at a total depth of 5995 feet; that thereafter and on or about the 14th day of August, 1943, "Palmer" drilled and completed, as Palmer-Sterba No. 5, a well at a location in the Southeast Quarter of the Northeast Quarter of the Southwest Quarter of said Section Thirty-five, which well was drilled to a depth of 6000 feet, sufficient to test what is commonly known as the Medrano Sand, but by reason of a fault there existing such sand was found absent, but that said well was completed as a commercial producer in what is commonly [fol. 10] known as the Marchand Sand; that thereafter and on or about the 7th day of November, 1943, "Palmer" drilled and completed as a dry hole Palmer-Sterba No. 6 well at a location in the Northeast Quarter of the Southwest Quarter of said Southwest Quarter of Section Thirty-five which well, in cooperation with Gulf Oil Corporation, was drilled to a depth of 6425 feet, sufficient to test what is commonly known as the Medrano Sand, but by reason of a fault there existing such sand was found absent; that thereafter and on or about the 21st day of March, 1947, "Palmer" drilled and completed as a commercial producer of oil

Palmer-Sterba No. 7 well at a location in the Northeast Quarter of the Southwest Quarter of the Southwest Quarter of said Section Thirty-five, which well is producing from what is commonly known as the Medrano Sand at a total depth of 5992 feet; that the drilling and development operations of "Palmer" were performed in a good and workmanlike manner and under the rules and regulations of the "Commission" in compliance with the implied covenants of said oil and gas lease and at all times "Palmer" paid to "Sterbas" their 1/8th of the proceeds of oil or gas produced, as provided under the terms and provisions of said lease.

Sixth: That on or about the 19th day of April, 1945, the Legislature of the State of Oklahoma enacted a statute providing for the unitized management of common sources of supply of oil and gas, which law was designated as House Bill No. 339 of the 1945 Legislature of the State of Oklahoma and became effective as a law July 25, 1945, and is set forth in O. S. Supp. 1947, Title 52, Sec. 286.1 to 286.17, both inclusive; that the terms and provisions of said statute purported to establish a radical departure from the rules [fol. 11] of property and property rights that had heretofore existed in the State of Oklahoma in respect to the drilling and development of common sources of supply of oil or gas; that said statute by its own terms provided (Sec. 286.2):

> "Provided this Act shall not apply to any field where the discovery well has been drilled (20) years prior to the effective date of this Act."

Seventh: That on or about October 27, 1946, the defendants, Phillips Petroleum Company, Amerada Petroleum Petroleum Corporation, Anderson-Prichard Oil Corporation, Ray Stephens, Inc., Stephens Petroleum Company and Magnolia Petroleum Company, as petitioners, filed their petition with the Corporation Commission of the State of Oklahoma for an order creating the "West Cement Medrano Unit" having for its purpose the unitized management, operation and further development of the entire Medrano Sand of the West Cement Field of Caddo County, Oklahoma, including the premises owned by

"Sterbas" as above described and the leaseholds thereon held by "Palmer" and Gulf Oil Corporation; that Gulf Oil Corporation has completed no producing well upon the premises and that "Sterbas" relied upon "Palmer" as their lessee and operator of all the producing wells upon their premises to fully protect their interests in said proceedings before the "Commission."

Eighth: That the proceedings before the "Commission" to establish such West Cement Medrano Unit were designated as Cause C. D. 1308 and that various hearings were had therein beginning on or about the 9th day of December, 1946, and terminating on or about July 29, 1947; that under the plan of unitization originally proposed by the petitioners [fol. 12] therein there was allocated to "Sterbas" property as their interest in the total unit the percentage of 7.683, which percentage was divided between the leaseholds thereon as follows:

Palmer (above 6000')	5.145
Gulf Oil Corporation (below 6000')	2.538

and that the proposed plan of unitization and the unit area designated thereby was agreed upon in writing by all of the members of the "Committee", defendants herein, including Gulf Oil Corporation.

Ninth: That "Palmer" as lessee of "Sterbas'" premises duly filed its answer and protest to the petition filed in said proceedings C. D. 1308 before the "Commission" and claimed in the hearings before said "Commission" that said statute under which petitioners sought to establish said unit was unconstitutional, constituting a deprivation of property without due process of law, impairment of the obligation of contract, unlawful delegation of power and a taking of property without compensation all in violation of the Constitution of the United States and the Constitution of the State of Oklahoma; that the proposed plan of unitization did not allocate to "Sterbas'" property and particularly to "Palmer's" leasehold thereon, a fair percent of the unit production; that the plan was otherwise inequitable and unjust; that the Medrano Sand of the West Cement Field did not constitute a single common source of supply; that the plan made no provision for adjustment of equities

or property rights as might be reflected by subsequent development; that the discovery well in the West Cement Field was drilled more than twenty (20) years prior to the effective date of the statute; and that the facts were other-
[fol. 13] wise, insufficient to justify the establishment of unitized management and operation.

Tenth: That petitioners in Cause C. D. 1308 before the Commission amended the proposed plan of unitization by allocating to "Sterbas'" premises a total unit percent of 7.67202, which was divided between the leaseholds thereon as follows:

Palmer (above 6000') 5.51614
Gulf Oil Corporation (below 6000') 2.15688;

that the percent above mentioned was allowed to Gulf Oil Corporation irrespective of the fact that no producing well was drilled on said "Sterbas'" premises to a depth greater than 6000 feet and that in the allocation of said percentage "Palmer" was given no consideration by the "Commission" on its contention of certain ownership and drainage rights below 6000 feet.

That on the 5th day of September, 1947, the "Commission" entered its order No. 20289 in Cause No. C. D. 1308, establishing the West Cement Medrano Unit exactly in accordance with the amended plan of unitization proposed by said petitioners, a copy of said order being attached hereto, marked Exhibit "A", and by reference made a part hereof; that said order included within the West Cement Medrano Unit the property owned by "Sterbas" and various other properties, all as shown by the hatched lines on the plat attached to Exhibit "A".

Eleventh: That said order No. 20289 entered by the "Commission" was illegal, invalid and void on its face because

First: The order shows on its face that the discovery well in the West Cement Field was drilled more than [fol. 14] 20 years prior to the effective date of the statute and therefore the law could not be applied.

Second: The law and order on its face shows that it is unconstitutional under both the Constitution of the

State of Oklahoma and the Constitution of the United States.

Twelfth: That the discovery oil and gas well in the West Cement Field of Caddo County, Oklahoma, was the Fortuna Company well drilled and completed at a location in the Southwest Quarter of Section Thirty-one, Township Six North, Range Nine West, on or about October 17, 1917; that despite such undisputed fact the "Commission" undertook to exercise arbitrary and excessive judicial power by applying the unitization statute above referred to to the West Cement Field of Caddo County, Oklahoma; that the "Commission" without legal authority sought to avoid the effect of the proviso contained in Sec. 286.2 of said statute above referred to by making the following finding:

> "That the West Cement Medrano Pool is a field within the meaning of that term as used in the second paragraph of Section 2 of H. B. 339 of the 1945 Oklahoma Legislature; that the term 'field' in ordinary usage has no fixed or definite meaning but is sometimes used to refer to the general area where a number of oil or gas formations are found and at other times used to refer to a particular common source of supply or pool; that as used by the Legislature aforesaid, the term was intended to relate to the particular common source of supply or pool sought to be unitized under the act and not to any general area which in a broader sense could be termed a field; that in effect said act relates to and deals only with single common sources of supply of oil and gas."

[fol. 15] That the "Commission" failed to consider or comment upon the constitutional questions raised and presented to it with respect to the validity of the statute under which it ordered the establishment of the West Cement Medrano Unit.

That all of the evidence introduced in Cause No. C. D. 1308 showed that the Medrano Sand bodies of the West Cement Field constituted two or more distinct common sources of supply as a result of geological faults of sufficient magnitude and extent to completely separate the sand

bodies of the said Medrano Sand lying on either side of such faults. That despite such facts the "Commission" in violation of the statu-e itself, which is applicable only to single common sources of supply, applied such statute and ordered a unitization of the several separate bodies of Medrano Sand of the West Cement Field.

Thirteenth: That "Palmer" duly appealed to the Supreme Court of the State of Oklahoma from "Commission's" order numbered 20289 and filed with the "Commission" an application for the fixing of supersedeas bond for the purpose of staying said order of the "Commission" pending final determination thereof by the Supreme Court of the State of Oklahoma; that the "Commission" on the 3rd day of October, 1947, fixed the amount of supersedeas bond in the sum of $250,000.00, which was unreasonable, arbitrary and excessive and "Palmer" failed to make bond in said amount, but perfected said appeal on or about October 18, 1947, without bond, and the same is now pending before the Supreme Court of the State of Oklahoma as case No. 33336; and that "Palmer" has duly filed in said appeal [fol. 16] its brief and is awaiting the filing of briefs by the "Committee" or its members, and the final hearing thereof by the Court; that all matters presented in said appeal are by reference made a part hereof.

Fourteenth: That on December 1, 1947, the "Sterbas" and "Palmer" involuntarily relinquished to defendant, Phillips Petroleum Company, as Unit Operator under the supervision of the "Committee" and under the authority and approval of the "Commission", possession, control and operation of the Medrano Sand in and under "Sterbas'" premises and "Palmer's" leasehold, all as above described; that at all times since December 1, 1947, said "Committee" and the "Commission" have withheld said property from "Sterbas" and "Palmer" and have exercised and have threatened to continue to exercise unreasonable, excessive and arbitrary judicial power in the operation and development of said property; that at all times since December 1, 1947, the "Committee" and the "Commission" have operated and developed said property as several common sources of supply and threaten to continue to do so.

Fifteenth: That "Sterbas" and "Palmer" as the result of the operations of the "Committee" as authorized by the "Commission" and the threatened continued operations have suffered and will suffer irreparable and permanent damages and that "Strbas" and "Palmer" will be faced with a multiplicity of suits of a prolonged and extensive nature if the "Committee" and the "Commission" are not restrained and prohibited from further operating their property.

[fol. 17] Sixteenth: That during the period of December, 1947, January and February, 1948, the "Committee" with the authority and approval of the "Commission" produced from "Sterbas'" and "Palmer's" property the total of 51,817 barrels of oil, which amount constituted for said period 11.3% of the total oil produced by the "Committee" under the authority of the "Commission" from the entire unit, the total unit production being 453,245 barrels of oil; that under the terms of the oil and gas lease existing between "Sterbas" and "Palmer"—assuming a price of $2.50 per barrel for oil—"Sterbas" would have been entitled to a royalty of approximately $16,000.00 for said three months' period and "Palmer" would have been entitled to an amount in excess of $100,000.00 on the oil and gas produced and sold; that under the percent allocated to "Sterbas'" property of the total unit production—assuming a price of $2.50 per barrel for oil—"Sterbas" would be entitled to a royalty for said three months' period of approximately $11,000.00 and "Palmer" would be entitled to a sum of approximately $60,000.00; that the deficiency in the amount payable to "Sterbas" under the terms of the oil and gas lease in the approximate sum of $5,000.00 has been or will be paid by the "Committee" with the authority and approval of the "Commission" to various of the "Committee" members and other parties within the unit and that "Sterbas" will be unable to recover the same without prolonged and expensive litigation involving many parties and many suits; that the deficiency in the amount payable to "Palmer" under the terms of its oil and gas lease during said period of a sum in excess of $40,000.00 has been or [fol. 18] will be paid by the "Committee" with the author-

ity and approval of the "Commission" to various of the "Committee" members and other parties within the unit and cannot be recovered by "Palmer" without prolonged and expensive litigation involving many parties and many suits; that petitioners are informed and believe that the "Committee" with the approval and authority of the "Commission" is continuing the same manner of operation of petitioners' property as those described during the period as aforesaid and will continue such operations indefinitely unless prohibited or restrained by this Court.

Seventeenth: That Petitioners have no speedy or adequate remedy except by an original action in this Court; the petitioners have no way of knowing the length of time required before the appeal in Case No. 33336 will be heard or whether the legal questions raised in said appeal can be properly determined in such appeal; that no actions or proceedings which petitioners could bring either in a State or Federal District Court or before the "Commission" could adequately provide a remedy to petitioners or prevent the continuing injury and damage which they are suffering each day; that the statute involved in this matter establishes a new property law in this state which has been applied by the "Commission" retroactively to the vested rights of petitioners; that the question of the validity of said statute is of great public interest, and, if valid, the interpretation and effect of such statute is likewise of great public interest; that this Court has broad powers in its original jurisdiction to issue writs of prohibition and to [fol. 19] exercise superintending control over inferior tribunals.

Wherefore, petitioners pray that this Court take original jurisdiction and issue its alternative writ of prohibition directed to the members of the "Commission" and the members of the "Committee" prohibiting them from enforcement of the "Commission's" order No. 20289 pending the final disposition hereof, and to set a day certain on which said writ shall be returnable on which the "Commission" and the "Committee" and the various members thereof shall be required to appear and show cause why such writ should not be made permanent, and for such other

and further relief as to the Court may seem proper in the premises.

Respectfully submitted, Claude Monnet, Coleman H. Hayes, Mart Brown, Mark H. Adams, Charles E. Jones, William I. Robinson, by Coleman Hayes, Attorneys for Petitioners.

[fol. 20] *Duly sworn to by Tom Palmer. Jurat omitted in printing.*

[fol. 21] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

No. 33708

[Title omitted]

NOTICE—Filed July 1, 1948

To Each of the Above Named Defendants:

Take notice that on the above and foregoing application, petition and exhibits attached thereto, Paul Sterba and Paul Sterba, Jr., a minor, by and through his father and next friend, Paul Sterba, and The Palmer Oil Corporation, as petitioners, will move the Supreme Court in the City of Oklahoma City, Oklahoma, on the 21 day of September, 1948, at the opening of Court on that day, or as soon thereafter as counsel can be heard, for Order assum-
[fol. 22] ing original jurisdiction and directing that an alternative writ of prohibition issue out of said court directed to said defendants, commanding them to disist and refrain from any further proceedings in the enforcement of Order No. 20289, made by the Corporation Commission of the State of Oklahoma on September 5, 1947, and for such other relief as may be just and proper.

Claude Monnet, Coleman H. Hayes, Mart Brown, Mark H. Adams, Charles E. Jones, William I. Robinson, by —— ——.

Proof of Service

STATE OF OKLAHOMA,
County of Oklahoma, ss:

Charles E. Jones, after being duly sworn upon oath, deposes and states:

That I served a copy of the foregoing notice, together with a copy of the application, petition and brief in support thereof, upon each of the defendants, as follows:

[fol. 23] 1. By delivering a true and correct copy to Ray Green ——, as attorney for the Corporation Commission of the State of Oklahoma, on the 30th day of June, 1948.

2. By delivering a true and correct copy on the following named persons, as resident agents for the following named defendants, on the 30th day of June, 1948.

(a) Bruce McClelland, Jr., Hightower Building, Oklahoma City, Oklahoma for Phillips Petroleum Company.

(b) George M. Green, 735 First National Building, Oklahoma City, Oklahoma, for Amerada Petroleum Corporation.

(c) T. H. Marshall, 1000 Apco Tower, Oklahoma City, Oklahoma for Anderson-Prichard Oil Corporation.

(d) H. G. Stephens, 2600 Apco Tower, Oklahoma City, Oklahoma for Ray Stephens, Inc.

(e) Waldo E. Stephens, 2600 Apco Tower, Oklahoma City, Oklahoma for Stephens Petroleum Company.

(f) Katherine Manton, 1517 N. W. 20th, Oklahoma City, Oklahoma for Gulf Oil Corporation and for Foster Petroleum Corporation.

(g) W. R. Wallace, 7th and Broadway, Oklahoma City, Oklahoma for Magnolia Petroleum Company.

(h) B. A. Ames, First National Building, Oklahoma City, Oklahoma for Cities Service Oil Company.

(i) Edward Howell, 2420 First National Building, Oklahoma City, Oklahoma for Sunray Oil Corporation.

In witness whereof, I have hereunto set my hand this 30th day of June, 1948.

Charles E. Jones.

Subscribed and sworn to before me this 30th day of June, 1948. My Commission Expires October 18, 1951. Andres Johnson, Notary Public. (Seal.)

[fol. 24] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

No. 33708

[Title omitted]

ORDER ASSUMING ORIGINAL JURISDICTION—Filed September 25, 1948

It is ordered that the application of the petitioners for the Court to assume original jurisdiction in the above cause for the purpose of determining whether a writ of pr-hibition should issue against the respondents above named, be, and the same is hereby sustained.

It is further ordered that the above cause be consolidated with cause No. 33,336—In the Matter of the Petition for the Creation of the West Cement Medrano Unit, and that the respondents above-named be granted until October 15, 1948, to respond to the application of the petitioners for a writ of prohibition.

Done by order of the Supreme Court in conference this 25th day of September, 1948.

Thurman S. Hurst, Chief Justice.

[fol. 25] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

No. 33708

[Title omitted]

RESPONSE TO APPLICATION FOR WRIT OF PROHIBITION—Filed October 15, 1948

Pursuant to order of this court dated September 25, 1948, the defendants Phillips Petroleum Company, Amerada Petroleum Corporation, Anderson-Prichard Oil Corporation, Ray Stephens, Inc., Stephens Petroleum Company, Gulf Oil Corporation, Magnolia Petroleum Company, Cities

Service Oil Company, Foster Petroleum Corporation and Sunray Oil Corporation file the following response to the petition for writ of Prohibition herein.

[fol. 26] Statement of Case

Petitioners in this case seek by Writ of Prohibition to test the validity and, as they say, "prevent and prohibit the enforcement" of Order No. 20289 made and entered by the Corporation Commission of Oklahoma in Cause C. D. 1308 under date of September 25, 1947, which has for its purpose the creation of the West Cement Medrano Unit and the unitization and unitized operation of the West Cement Medrano common source of supply of oil and gas in Caddo County, Oklahoma.

A copy of the subject order wherein the objects to be accomplished, the procedure followed and the facts upon which it was based are all clearly stated is attached to the petition herein or may be found in the record in appeal Case No. 33336, consolidated herewith at pages 1735 to 1780 and is by reference made a part of this response.

Said order was made pursuant to express authority of H. B. 339 of the 1945 Oklahoma Legislature (Sections 286.1 to 286.17, Title 52 O. S. Supp. 1945) and in all respects conforms to the requirements thereof. The petitioner, The Palmer Oil Corporation, in its brief (p. 9) in said appeal case has this to say with respect to the proceedings before the Commission and the form of the order:

> "The petition and amended plan of unitization and order of Commission approving the same *in form follows generally the requirements of the statutes under which they were prepared and made.*

[fol. 27] No supersedeas bond having been filed, the West Cement Medrano Unit created pursuant to such order took over the unitized operation of the common source of supply December 1, 1947 and has since been in the possession thereof operating the whole of said common source of supply as a unit in accordance with the Plan of Unitization made a part of the order.

In the meantime and within sixty days after the date of the order, the petitioner, The Palmer Oil Corporation, and a number of other persons not parties to this proceeding, duly and regularly took an appeal therefrom to this court which said appeal is now pending in this court in Cause 33336 which by the aforesaid order of this court dated September 25, 1948, has been consolidated with this cause.

As stated in the brief of petitioners herein (page 1) the same identical questions as herein presented and others are presented in said appeal case No. 33336. In other words, no question of substance is raised in this proceeding that has not or cannot be raised and decided on said appeal.

Subsequent to the making of said order, the Commission has taken no action in respect thereof other than to fix the amount of the supersedeas bond and take such other incidental steps as required in connection with the appeal therefrom, such as certifying the record, etc. The only other action that has been taken or is in contemplation is that of the parties in interest and the unit under and in compliance with the law and order. So far as the Commission is concerned, the order is final, complete and in [fol. 28] effect. It is attempting to exercise no power of enforcement. The petitioners point to no further action or threatened action on the part of the Commission.

Argument and Brief

Petitioners in their petition and brief herein raise and rely upon what they term three propositions which briefly stated are: "I", that said H. B. 339 has no application to the West Cement Medrano Field because of the provisions of Section 2 thereof excluding fields wherein the discovery well was drilled twenty years prior to the effective date of the act; "II", that said act is violative of both the state and federal constitutions; and "III", that an original action for a Writ of Prohibition in this court is a proper remedy.

Response to Petitioners' Propositions I and II Aforesaid

We treat petitioners' Propositions I and II together because both are specifically discussed and answered at length in the brief of defendants in error in appeal Case No. 33336 consolidated herewith and in answer to which these defendants wish to adopt by reference the argument and brief in said appeal case and thus avoid burdening the court with repetitious briefs. Although the brief of defendants in error in such appeal case have not as yet actually been filed, due to press of work and shortage of help on the part of the printer, it has been written and defend-
[fol. 29] ants are advised by the printer that it will be filed within the next few days. When filed, the court's attention is specifically called to subhead 12 of Point III of said brief dealing specifically with the subject matter of petitioners' Proposition I herein and to Point I of said brief which considers in detail the constitutional questions raised by petitioners' Proposition II in this case.

There is absolutely no merit in either Proposition I or Proposition II so raised by petitioners.

Response to Petitioners' Proposition III Aforesaid

Although these defendants have no objection to testing the validity of the subject order of the Corporation Commission in this or in any other cause they do feel it their duty to advise the court of their opinion that the application herein for an original Writ of Prohibition is not a proper remedy in this instance. The tests laid down by this court as to when it will take original jurisdiction on application for Writ of Prohibition are considered under subheads A and B as follows:

A. Petitioners have an adequate remedy at law

This court has repeatedly held that prohibition being an extraordinary remedy cannot be resorted to when the ordinary and usual remedies, such as an appeal, provided by law are available. See Baker v. Capshaw, 130 Okl. 86, 265 P. 115; State ex rel. Mays v. Breckenridge, 43 Okl. [fol. 30] 711, 142 P. 407; Breddy v. Mallory, 57 Okl. 499, 157 P. 742; Sterling Refining Co. v. Walker, 165 Okl. 45,

25 P. (2d) 312; State v. Bond, 172 Okl. 415, 45 P. (2d) 712, and numerous other cases cited in Oklahoma Digest, title "Prohibition", Key No. 3 and Note 26 to Article 7, Section 2, O. S. A. Const. This same rule was adhered to as late as *October 5, 1948*, in an opinion by Mr. Justice Luttrell in the case of Board of Commissioners of Wagoner County v. District Court of Wagoner County, No. 33239, reported in Volume 19 of the Journal of the Oklahoma Bar Association, Page 1295.

Under the express provisions of Section 7 of said H. B. 339 (Section 286.7, Title 52, O. S. Supp. 1947) the petitioners are afforded a plain and adequate remedy by direct appeal to this court from the order of the Commission, a remedy which the petitioner, The Palmer Oil Corporation, has taken advantage of in appeal Case No. 33336 consolidated herewith. Petitioners admit that the same questions raised herein and more are raised in said appeal case. Nowhere do petitioners point out or so much as claim wherein the remedy by appeal is not in all respects adequate. Petitioner's right in the appeal case to fully present every question of substance herein presented is not questioned by anyone in that case.

B. No exercise of judicial power is involved.

The rule is well established and is supported by all of the pertinent authorities cited by petitioners that a Writ of Prohibition will issue only in a case where an inferior [fol. 31] "*court or tribunal*" assumes to exercise "*judicial power*" not authorized by law. See authorities cited by petitioners in their brief.

To make such authorities appear applicable, petitioners baldly assume and say that the action complained of constitutes an "exercise of judicial powers without authority of law" on the part of the Commission and other like boards or tribunals are, in respect to *certain of their functions and duties*, judicial in nature and exercise judicial or quasi judicial powers and are, to that extent, subject to control by Writ of Prohibition, but wholly fail to cite authorities or discuss wherein the particular action and functions herein complained of are either judicial or quasi judicial in character.

It is the nature of the particular function or act that governs, and if legislative or administrative in character, prohibition does not lie. See Sterling Refining Company v. Walker, 165 Okl. 45, 25 P. (2d) 312; Russell v. Walker, 160 Okl. 145, 15 P. (2d) 115; Oklahoma City v. Corporation Commission, 80 Okl. 194, 195 P. 498.

The action here involved is clearly and wholly legislative and administrative in character. No judicial functions on the part of the Commission are involved. The Legislature being unable in the legislative act to determine all of the facts and prescribe in detail the Plan of Unitization in respect to the different pools, has in the act stated generally the objects to be accomplished, named the facts that must be found to exist to authorize action hereunder, and empowers the Commission, guided by certain pre- [fol. 32] scribed standards, to complete the legislative process by working out the details of the Plan of Unitization as applied to a particular common source of supply. Once the order is entered and the unit is created, as in this case, the Plan of Unitization so prescribed thereby become the rule of conduct in respect to the particular unit in so far as H. B. 339 is concerned. Such order and Plan of Unitization look only to the future and change existing conditions by making a new rule to be thereafter applied. This is one and perhaps the outstanding recognized test of legislative as distinguished from judicial action. See Prentis v. Atlantic Coast Line Company, 211 U. S. 210, 53 L. ed. 150, 29 Sup. Ct. 67; Wilcox Oil & Gas Co. v. State, 162 Okl. 80, 19 P. (2d) 347; Southwestern Bell Telephone Co. v. State, 181 Okl. 246, 71 P. (2d) 747; Oklahoma Gas and Electric Company v. Wilson & Company, 54 F. (2d) 596.

And as before stated in the statement of the case, the Commission is not attempting to exercise any authority beyond that of merely making the order complained of. None is called for under the law. The petitioners fail to point to any such action.

So far as the Commission is concerned, there is nothing further to prohibit or restrain.

The action of these defendants, as members of the Operating Committee of the Unit, is, of course, not judicial in

nature. Such action is purely administrative. Neither the [fol. 33] unit, the operating committee nor these defendants, either individually or collectively, constitute a "judicial or quasi judicial tribunal" in any sense of the word. They exercise no judicial function or powers of any kind.

In this connection, we would like to correct a false impression that may be gained by the court from certain erroneous statements made by the petitioners. They say that these defendants, as members of the Operating Committee of the Unit, and the Corporation Commission, are in possession of petitioners' properties and are wrongfully withholding possession thereof.

The Commission is in no way in possession of any of the properties in the West Xement Medrano Field, and is exercising no power of supervision over the operation thereof except only such regulatory power as is granted to it under the general Conservation Laws of the state. Again we say that the only action taken by the Commission under or in respect to H. B. 339 was to make the order herein complained of. It has done nothing further in regard thereto other than the procedural steps incident to the appeal therefrom.

Nor are these defendants, either individually or as members of the unit Operating Committee, in possession of petitioners' properties. The possession thereof, in so far as the Medrano Sand is concerned, is in the *West Cement Medrano Unit*, which, under the law, is a body politic and corporate composed of all the lessees in the field, including The Palmer Oil Corporation. Under the Plan of Unitiza- [fol. 34] tion every lessee in the unit is entitled to representation on the Operating Committee. Representatives on the Operating Committee merely serve as a board of directors. The functions and duties of that Committee are clearly defined and limited in the Plan of Unitization.

Conclusion

These defendants respectfully submit that there is no merit in either the contention that the Corporation Commission has acted without authority of law or that the Act under which it acted is unconstitutional, or that an application for an original Writ of Prohibition is a proper

remedy in this case, and pray that petitioners take nothing by reason of their petition herein.

Respectfully submitted, Harry Page, Booth Kellough, Tulsa, Oklahoma; Attorneys for Amerada Petroleum Corporation. Brown, Darrough and Ball, Oklahoma City, Oklahoma; Attorneys for Anderson-Prichard Oil Corporation. F. H. Bacon, Chas. T. Klein, Bartlesville, Oklahoma; Attorneys for Cities Service Oil Company. Wm. C. Liedthe, Russell G. Lowe, Redmond S. Cole, Cyrus L. Billings, James B. Diggs, Jr., Chas. T. Follinsbee, [fol. 35] Tulsa, Oklahoma; Attorneys for Gulf Oil Corporation. Walace Hawkins, Dallas Texas, W. R. Wallace, Attorneys for Magnolia Petroleum Company. Dow Anderson, Oklahoma City, Oklahoma; Attorney for Stephens Petroleum Company and Ray Stephens, Inc. Paul E. Taliaferro, Forney Hutchinson, Jr., Tulsa, Oklahoma; Attorneys for Sunray Oil Corporation. Don Emery, Rayburn L. Foster, R. B. F. Hummer, R. M. Williams, Bartlesville, Oklahoma, Harry D. Turner, Oklahoma City, Oklahoma; Attorneys for Phillips Petroleum Company. By R. M. Williams, Bartlesville, Oklahoma.

Proof of Service

R. M. Williams, one of the attorneys for the hereinabove named defendants in the subject cause states that he on the 14th day of October, 1948, mailed, postage prepaid, a full, true and correct copy of the foregoing response to petitioners' application for Writ of Prohibition to the following named attorneys of record for said petitioners, [fol. 36] namely: Coleman H. Hays, 1719 First National Building, Oklahoma City, Oklahoma; Mark H. Adams, 1008 Brown Building, Wichita, Kansas; at the addresses so named.

R. M. Williams.

[fol. 37] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

No. 33708

[Title omitted]

ORDER GRANTING RESPONDENT TIME TO RESPOND ETC.—Filed October 26, 1948

The clerk is hereby directed to enter the following orders:

Respondent granted until November 3, 1948, to respond to application for writ of prohibition.

Thurman S. Hurst, Chief Justice.

[fol. 38] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

No. 33708

[Title omitted]

RESPONSE OF DEFENDANT, CORPORATION COMMISSION OF OKLAHOMA, TO PETITION FOR WRIT OF PROHIBITION—Filed January 29, 1949

The questions and issues presented by the petition for writ of prohibition herein and the petitioners' right to maintain the same, having been fully considered and answered in the response of the other defendants filed in this cause and in the brief of defendants in error in appeal Case No. 33336 pending in this court, the defendant, Corporation Commission of Oklahoma, consisting of Reford Bond, Chairman, Ray O. Weems, Vice Chairman, and Ray C. Jones, Commissioner, rather than burden the court with an extended re-
[fol. 39] statement thereof, by reference adopts said response of the other defendants herein and said brief in Case No. 33336 as its response to said petition for writ of prohibition all to the same extent as if this defendant had

joined in said response and brief as one of the parties thereto in the first instance.

This defendant, however, wishes to further confirm the facts: that in making Order 20289 complained of by the petitioners herein, it acted strictly in accordance with the express authority of H. B. 339 of the 1945 Oklahoma Legislature being Sections 286.1 to 286.17, Title 52 O. S. Sup. 1945; that to the best of its judgment based on a careful consideration of all the evidence and its prior knowledge of the West Cement Medrano Field, the facts in respect to said field and the production of oil and gas therefrom, both with and without unitization, and the reasonableness of the Plan of Unitization prescribed therefor are as found and recited in said order, copy of which is attached to the petition herein; that subsequent to the entry of said order and the hearing and entry of the order fixing the amount of the supersedeas bond, this defendant has not taken or in any way threatened to take any further action in respect to said order by way of enforcement or otherwise; that so far as this defendant is concerned, said order is now final and complete except only for the pendency of the appeal therefrom in Cause No. 33336; that this defendant is not in possession of any of the West Cement Medrano Field or of the [fol. 40] properties of the petitioners nor is it attempting to exercise and authority over the same other than that granted to it by the general oil and gas conservation laws of the State of Oklahoma concerning which petitioners have raised no question nor made complaint; that this defendant is neither going or threatening to do anything that could be the subject of a writ of prohibition in this cause.

From its knowledge and experience growing out of the regulation and supervision of the production of oil and gas in the State of Oklahoma as well as the evidence upon which said Order 20289 was based, this defendant is convinced and believes that the unitization and the unitized operation of oil and gas pools such as the West Cement Medrano Field and the other fields that have been unitized pursuant to orders of this Commission, referred to more in detail in the response of the other defendants herein, is the proper and only way by which such fields can be further developed and operated so as to obtain the greatest ultimate recovery of

oil and gas therefrom for the benefit of the several common owners thereof, the State of Oklahoma and the public at large; that the benefits thus obtainable through unitization and the unitized operation of such fields are not of an inconsequential nature but are to be measured in the millions of barrels of oil and in the billions of cubic feet of gas which cannot otherwise be recovered or would be wasted; that the said orders of this defendant in respect thereof, including [fol. 41] said Order 20289 herein complained of, are in all respects fair, reasonable and equitable, will result in the accomplishment of the results thereby sought to be obtained and fully protect and safeguard the rights and interests of the several persons affected thereby consistent with the mutual rights and interests of all; that said orders are in all respects valid and constitutional and should be sustained by this court.

Although this defendant, like the other defendants herein, as set out in their response which has been adopted as the response of this defendant, has no objection to a testing of the validity of said Order 20289 by petition for writ of prohibition in this or in any other cause but believes that the proper way and proceeding in which to test the validity thereos is by way of appeal in said Cause No. 33336 in which the court has before it the complete record of all the proceedings and evidence in the case and which constitutes an adequate remedy at law especially provided for by said H. B. 339 pursuant to which said order was entered.

Wherefore, this defendant respectfully submits that the petition for writ of prohibition herein is without support in either law or fact and is not a proper remedy in this case and prays that the same be dismissed and that petitioners take nothing by reason thereof.

Respectfully submitted, Corporation Commission of Oklahoma, By Floyd Green, Conservation Attorney.

[fol. 42] PROOF OF SERVICE

Floyd Green, attorney for the defendant, Corporation Commission of Oklahoma, states that on the 28 day of January, 1949, he mailed full, true and correct copies of the above and foregoing response to Mark H. Adams, attorney of rec-

ord for the petitioners herein, postage prepaid, at his regular mailing address shown on the appearance docket in this court and have also furnished the co-defendants herein with copies thereof.

Dated this 28 day of January, 1949.

Floyd Green, Attorney for the Corporation Commission of Oklahoma.

[fol. 43] [File endorsement omitted]

In Supreme Court of Oklahoma

No. 33,336

The Palmer Oil Corporation, a corporation, et al., Plaintiffs in Error,

vs.

Phillips Petroleum Company, a corporation, et al., Defendants in error

No. 33,655

C. C. Spiers, Plaintiffs in Error,

vs.

Magnolia Petroleum Company, a corporation, et al., Defendant in Error

No. 33,656

C. C. Spiers, Plaintiff in Error,

vs.

Magnolia Petroleum Company, a corporation, Defendants in Error

Order Setting Causes for Oral Argument—Filed March 31, 1949

It is hereby ordered that oral argument in the above styled and numbered causes be set for Tuesday, April 19, 1949, at 9:30 A. M.

Done by Order of Court this 31st day of March, 1949.

Denver N. Davison, Chief Justice.

[fol. 44] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

No. 33336

THE PALMER OIL CORPORATION, a corporation, et al., Plaintiffs in Error,

vs.

PHILLIPS PETROLEUM COMPANY, a Corporation, et al., Defendants in Error

and

No. 33708

PAUL STERBA and PAUL STERBA, JR., a minor, by and through his father and next friend, Paul Sterba, and The Palmer Oil Corporation, a corporation, Petitioners,

vs.

CORPORATION COMMISSION OF OKLAHOMA, et al., Defendants

OPINION—March 20, 1951

Syllabus

1. The Legislature is itself the judge of the conditions which warrant legislative enactments, and they are only to be set aside when they involve such palpable abuse of power and lack of reasonableness to accomplish a lawful end that they may be said to be arbitrary, capricious, and unreasonable, and hence irreconcilable with the conception of due process of law. Whether the enactment is wise or unwise, whether it is based on sound economic theory, whether it is the best means to achieve the desired result, whether, in short, the legislative descretion within its prescribed limits should be exercised in a particular manner, are ordinarily manners for the judgment of the legislature, and the earnest conflict of serious opinion does not suffice to bring them within the range of judicial cognizance.

[fol. 45] 2. The police power of the State extends to defining the correlative rights of owners in a common source

of oil and gas supply, providing for the management, operation and further development of such common source of supply and distributing the proceeds thereof among those entitled thereto.

3. House Bill 339 of the 1945 Legislature (Tit. 52 O. S. Supp. 1947, secs. 266.1 to 286.17), known as the Unitization Act is not violative of Secs. 7, 15, 23 or 24 of Art. II, or sec. 1 of Art. IV or Secs. 1 or 51 of Art. V of the Constitution of the State of Oklahoma, nor violative of sec. 10 of Art. I of or of the Fifth or Fourteenth Amendments to the Constitution of the United States.

4. The unitization Act does not involve any unconstitutional delegation of legislative power by the provision which requires the petition of lessees of record of more than fifty percent of the area of common source of supply in order to give the Commission jurisdiction under the Act.

5. Order No. 20289 of Corporation Commission is not contrary to either the law or the evidence.

Proceedings before the Corporation Commission by Phillips Petroleum Company and others, lessees, who petition for the creation of a unit, having for its purpose the unitized management, operation and further development of what is termed the West Cement Medrano common source of supply of oil and gas. The Palmer Oil Corporation and others, lessees, lessors and royalty owners protested. From an Order of the Commission creating the unit protestants appeal.

[fol. 46] Order Affirmed

Original action by The Palmer Oil Corporation et al., against Corporation Commission for Writ of Prohibition.

Writ Denied

Claude Monett, Coleman Hayes and Mart Brown, all of Oklahoma City, Oklahoma, and Mark H. Adams, Charles E. Jones, and Wm. I. Robinson, all of Wichita, Kansas, For Plaintiff in Error, The Palmer Oil Corporation.

Hatcher & Bond, of Chickasha, Jack W. Page, of Oklahoma City, For Plaintiffs in Error, Tom Potter, et al.

Harry D. Page and Booth Kellough, both of Tulsa, Oklahoma, For Defendant in Error, Amerada Petroleum Corp.

Brown, Darrough and Ball, of Oklahoma City, For Defendant in Error, Anderson-Prichard Oil Corp.

Wm. C. Liedtke, Russel G. Lowe, Redmond S. Cole, Cyrus L. Billings, James B. Diggs, Jr., and Charles L. Follansbee, all of Tulsa, For Defendant in Error, Gulf Oil Corporation.

Walace Hawkins, of Dallas, Texas, W. R. Wallace, Oklahoma City, Okla., For Defendant in Error, Magnolia Petroleum Co.

Don Anderson, Oklahoma City, For Defendants in Error, Stephens Petroleum Co.

[fol. 47] Don Emery, Rayburn L. Foster, R. B. F. Hummer, R. M. Williams, all of Bartlesville, and Harry D. Turner, of Oklahoma City, For Defendant in Error, Phillips Petroleum Co.

George W. Hazlett, Villard Martin, Wilbur Heard, R. M. Williams, Chas. B. Ellard, A. B. Tanco, Forrest M. Darrough, J. H. Crocker, M. Darwin Kirk, T. Murray Robinson, Amici Curiae.

GIBSON, J:

Cause No. 33,336 is an appeal from an Order of the Corporation Commission providing for the unitized management, operation and further development of what is designated as "West Cement Medrano Unit", located in Caddo County, Oklahoma, made in pursuance of the provisions of 52 O. S. Supp. 1945, secs. 286.1 to 286.17. Cause No. 33,708 is an original action for a Writ prohibiting the Corporation Commission from exercising further jurisdiction in the matter of said unitization. Since the question of the issuance of the writ depends upon the issues involved on the appeal the same will be disposed of following determination of the appeal.

Involved on the appeal are two major questions. One, the constitutionality of said sections of the statute which, as a whole, constitute what is known as the Unitization Act (H. B. 339 of the 1945 Oklahoma Legislature). The other, the legality of the order of the Commission if authorized under the Act to effect unitization. These questions will be considered in the order stated.

[fol. 48] The nature of the Act and the purposes sought to be accomplished thereby are clearly reflected in the legislature declaration made in the first section thereof, as follows:

> "Sec. 286.1. The Legislature finds and determines that it is desirable and necessary, under the circumstances and for the purposes hereinafter set out, to authorize and provide for unitized management, operation and further development of the oil and gas properties to which this Act is applicable, to the end that a greater ultimate recovery of oil and gas may be had therefrom, waste prevented, and the correlative rights of the owners in a fuller and more beneficial enjoyment of the oil and gas rights, protected."

Plaintiffs in error recognize that the subject-matter of the Act is one within the police power of the State and that the constitutional questions presented are whether the Act constitutes a reasonable exercise thereof.

We will refer to and state or quote the particular provisions of the Act involved on considering the arguments directed thereto.

The plaintiffs in error, though numerous, represent but three classes in interest; lessors, lessees and those having, severally, royalties interest which are in excess of one-eighth of the total production.

On behalf of the lessees it is contended that the Act is violative of Art. II, sections 7, 15, 23 and 24 of the Constitution of the State of Oklahoma, and of Art. K, sec. 10 of and the Fourteenth Amendment to the Constitution [fol. 49] of the United States. For the purpose of the presentation, there is no segregation of the contentions as to each of said constitutional provisions for the expressed reason the grounds relied on have common application to all. Two grounds are relied on. One, the Act as a whole is unreasonable. The other, the Act constitutes an unauthorized delegation of legislative power.

On behalf of the lessors it is contended that the Act is violative of all of said constitutional provisions and of sec. 51 of Art. V of the Constitution of the State of Oklahoma. The several violations are referable to definite grounds

which have common application and there is no occasion to segregate the contentions as to each. Five grounds are relied on. One, the Act constitutes an unauthorized delegation of legislative power, which ground is the same as lessees' ground number Two and is urged on the same bases. Two, that both in the formation of the unit and in the committee management thereof lessees only are recognized and therefore to the exclusion of the lessor. Three, the Act imposes an unauthorized burden upon the royalty interest in the production. Four, the Act imposes an unauthorized burden upon the leased premises of the lessor. And, fifth, the Act is violative of the obligations of contracts.

The substance of lessees' ground One is that the Act is unreasonable because it does not require as a condition to the establishment of the unit a finding by the Commission [fol. 50] that, for the purpose of conservation, the application of Act will be more effective than that of the existing laws. In support thereof attention is called to the fact that under the provisions of the Act the unit may be established in fields where production has been had for nearly twenty years; that unitization, in which gas energy is a prime factor for operation, would be less satisfactory by reason of the expenditure thereof during operations prior to unification and would disturb the multitude of rights that had become established on the basis of the methods being employed under the existing laws. There is then declared:

> "It is our nearest contention that a compulsory unitization statute which clearly disrupts the existing law and existing rights can only be justified where the advantages can be gained far offset the losses to be sustained to property or individual rights."

There are then recited the findings required of the Commission by the Act, and it is stated that thereunder "the Commission could approve a plan of unitization which definitely could not result in an increased recovery of oil and gas over that being accomplished by present methods of operation under the general conservation law." It is then declared that, by reason thereof:

> "We submit that any compulsory unitization law, competing with the general conservation law whose real

purpose is exactly the same, should not be given constitutional sanction under the police power unless it [fol. 51] specifically provides that the Commission finds that any plan of unitization approved thereunder will accomplish the conservation of oil and gas with substantially greater results than is being accomplished under the general conservation law still in full force and effect."

The findings required by the Act appear in section 286.4, as follows:

"If upon the filing of a petition therefor and after notice and hearing, all in the form and manner and in accordance with the procedure and requirements hereinafter provided, the Commission shall find (a) the the unitized management, operation and further development of a common source of supply of oil and gas or portion thereof is reasonably necessary in order to effectively carry on pressure-maintenance or repressuring operations, cycling operations, water flooding operations, or any combination thereof, or any other form of joint effort calculated to substantially increase the ultimate recovery of oil and gas from the common source of supply; and (b) that one or more of said unitized methods of operation as applied to such common source of supply or portion thereof are feasible, will prevent waste and will with reasonable probability result in the increased recovery of substantially more oil and gas from the common source of supply than would otherwise be recovered; and (c) that the estimated additional cost, if any, of conducting such operations will not exceed the value of the additional oil and gas so recovered; and (d) that such unitization and adoption of one or more of such unitized methods of operation is for the common good and will result in the general advantage of the owners of the oil and gas rights within the common source of supply or portion thereof directly affected, it shall make a finding to that effect. . . ."

[fol. 52] As indicated in the contention, the Act does not authorize the Commission to withhold establishment of

unification where, in the opinion of the Commission Oil conservation may be accomplished better under existing laws. It limits the findings required of the Commission to the ascertainment of definite facts which in the opinion of the Legislature are sufficient to justify application of the law.

There is no contention that the standards prescribed are insufficient in any respect other than in not including the suggested finding. Therefore, it necessarily follows that the contention challenges the authority of the Legislature in dealing with matters of policy, which is a realm that is without the scope of judicial inquiry. The Supreme Court of the United States, in C. B. & Q. Railroad Company et al v. McGuire, 219 U. S. 549, 55 L. ed. 328, 339, said:

> "* * * The scope of judicial inquiry in deciding the question of *power* is not to be confused with the scope of legislative considerations in dealing with the matter of *policy*. Whether the enactment is wise or unwise, whether it is based on sound economic theory, whether it is the best means to achieve the desired result, whether, in short, the legislative discretion within its prescribed limits should be exercised in a particular manner, are matters for the judgment of the legislature, and the earnest conflict of serious opinion does not suffice to bring them within the range of judicial cognizance."

[fol. 53] This court, in In re Application of Richardson, 199 Okla. 406, 184 Pac. (2d) 642, said:

> "The Legislature is itself the judge of the conditions which warrant legislative enactments, and they are only to be set aside when they involve such palpable abuse of power and lack of reasonableness to accomplish a lawful end that they may be said to be merely arbitrary, capricious, and unreasonable, and hence irreconcilable with the conception of due process of law."

To the same effect see Herrin v. Arnold, Judge, 183 Okla. 392, 82 Pac. (2d) 977; Jack Lincoln Shops, Inc. v. State Dry Cleaners' Board, 192 Okla. 251, 135 Pac. (2d) 332; Phelps

et al. v. Childers, State Auditor, 184 Okla. 421, 89 Pac. (2d) 782; City of McAlester v. Jones, 181 Okla. 77, 72 Pac. (2d) 371; Barnes v. Smith, Judge, 179 Okla. 71, 64 Pac. (2d) 1217; Grable v. Childers, State Auditor, 176 Okla. 360, 56 Pac. (2d) 357.

Though not necessary to so state, the Act reflects that the Legislature not only considered operations had and being had under existing laws but gave recognition to those methods employed which it considered to better serve the overall purpose of conservation by withholding the application of the Act thereto. Such is reflected in second section of the Act (52 O. S. Supp. 1945, sec. 286.2), which we quote:

> "This Act shall apply only to common sources of supply of oil, oil and gas, or gas distillate in this State.
>
> "The provisions of this Act shall not apply to any common source of supply of oil, oil and gas or gas dis- [fol. 54] tillate or any part or parts thereof which at the effective date of this Act are being operated by or under pressure maintenance, repressuring, or secondary recovery methods or operations, provided, that nothing contained in this Act, shall prevent the voluntary inclusion and extension of areas in which are located such existing pressure maintenance, repressuring, or secondary recovery methods or operations as unit areas under the provisions of this Act. Provided this Act shall not apply to any field where the discovery well has been drilled twenty (20) years prior to the effective date of this Act."

Lessors' ground number Two and Lessors' ground number One, both to the effect the Act constitutes an un-authorized delegation of legislative power, have reference to the force of the following provisions of the Act:

> "To give the Commission jurisdiction hereunder the petition shall be filed by, or with the authority of, lessees of record of fifty percent (50%) or more of the area of the common source of supply or portion thereof sought to be unitized. The petition shall set forth a description of the proposed unit area with a map or plat thereof attached, must allege the existence of the facts required to be found by the Commission as here-

inabove provided and shall have attached thereto a recommended plan of unitization applicable to such proposed unit area and which the petitioners consider to be fair, reasonable and equitable. (Sec. 286.4).

* * * * * * *

[fol. 55] "If at any time after the filing of a petition for the creation of a unit and within sixty (60) days after the entry of an order by the Commission approving the creation of the same, lessees of record of fifteen percent (15%) or more of the proposed unit area, if prior to the entry of the order by the Commission, or lessees of record of fifteen percent (15%) or more of the unit area as defined by the approved plan of unitization and order of the Commission, if after the entry of such order, shall file written protest with the Commission against the creation of the unit, the Commission shall vacate all action of any kind theretofore taken and dismiss the proceedings for the creation of such unit." (Sec. 286.6).

It is contended that, since the fact of the legislation is made dependent upon the will of a majority of those to be affected thereby, there is a delegation of legislative power. As supporting the contention that there has been an unauthorized delegation of legislative power and a violation of due process by reason thereof the cases of Carter v. Carter Coal Company, 298 U. S. 238 80 L. ed. 1160, and State of Washington ex rel. v. Roberge, 278 U. S. 116, 73 L. ed. 210, are relied on. In the Carter case the donees of the power were given authority to make decisions determinable of the rights of others and in the Washington case the donees were given an arbitrary power to veto the exercise by others of their unquestioned rights. Neither situation obtains herein.

In the first place, the powers so granted can neither establish nor disestablish the unitization when established because the power of establishment rests with the Corporation Commission. In such situation there is not a trace [fol. 56] of legislative power exercised. This conclusion is fortified by the fact that even if the establishment were

dependent upon the will of the lessees their exercise thereof would not be the exercise of legislative authority. The reason for this is clearly reflected in the opinion of the Supreme Court of the United States in Currin v. Wallace, 306 U. S. 1, 83 L. ed. 441, therein it is said:

"So far as growers of tobacco are concerned, the required referendum does not involve any delegation of legislative authority. Congress has merely placed a restriction upon its own regulation by with-olding its operation as to a given market 'unless two-thirds of the growers voting favor it.' Similar conditions are frequently found in police regulations. Thomas Cusack Co. v. Chicago, 242 U. S. 526, 530, 61 L. ed 472, 475, 37 S. Ct. 190, L. R. A. 1918A, 136, Ann. Cas. 1917C, 594. This is not a case where a group of producers may make the law and force it upon a minority (see Carter v. Carter Coal Co., 298 U. S. 238, 310, 318, 80 L. ed. 1160, 1188, 1192, 56 S. Ct. 855) or where a prohibition of an inoffensive and legitimate use of property is imposed not by the legislature but by other property owners (see Washington ex rel. Seattle Title Trust Co. v. Roberge, 278 U. S. 116, 122, 73 L. ed. 210, 214, 49 S. Ct. 50, 86 A. L. R. 654). Here it is Congress that exercises its legislative authority in making the regulation and in prescribing the conditions of its application. The required favorable vote upon the referendum is one of these conditions. The distinction was pointed out in J. W. Hampton, Jr. & Co. v. United States, 276 U. S. 394, 407, 72 L. ed 624, 629, 48 S. Ct. 348, where in sustaining the so-[fol. 57] called 'flexible tariff provision' of the Act of September 21, 1922, and the authority it conferred upon the President, we said: 'Congress may feel itself unable conveniently to determine exactly when its exercise of the legislative power should become effective, because dependent on future conditions, and it may leave the determination of such time to the decision of an Executive, or, as often happens in matters of state legislation, it may be left to a popular vote of the residents of a district to be affected by the legislation. While in a sense one may say that such

residents are exercising legislative power, it is not an exact statement, because the power has already been exercised legislatively by the body vested with that power under the Constitution, the condition of its legislation going into effect being made dependent by the legislature on the expression of the voters of a certain district."

This type of legislation is not uncommon and has been applied in a variety of situations where community of interest obtains. Frequent examples are acts dealing with water rights and drainage in Oklahoma it is reflected in 82 O. S. 1941, sections 111-273, providing for creation of Irrigation Districts upon petition of fifty or a majority of the holders of title to lands susceptible of irrigation; in 82 O. S. 1941, sections 281-382, providing for Creation of Drainage Districts upon petition of five or more residents and further providing (sec. 311) that upon protest of 50% of the landowners, or owners of the total acreage embraced in the district, the proceedings are to be dismissed; in 82 O. S. 1941, sections 541-687, providing for creation of Oklahoma Conservancy District Act, upon peti- [fol. 58] tion of percentage of property owners and the dismissal of the proceedings upon protest of a percentage of the landowners; and 82 O. S. 1941, sections 721 et seq., providing for creation of Water Improvement District upon petition of fifty or a majority of the holders of title to lands in the proposed district. Under authority of these Acts districts have been created and thereafter have functioned. It does not appear that the constitutionality of any has been challenged upon the ground that the operation of the law is predicated upon the will of those whose interests are involved although the question of rights controlled by the Acts has been involved in litigation and the validity of the Acts recognized by this court. (Fry v. Swift, 164 Okla. 4, 22 Pac. (2d) 94; Seikel v. Grimes, County Treas., 189 Okla. 658, 119 Pac. (2d) 59). That question, however, has been presented frequently in other jurisdictions and, so far as we have noted, the uniform holding is to the effect there is no delegation of legislative power and in the briefs herein there have been cited no cases in point holding to the contrary. State v. Drainage

District No. 1, 123 Kan. 191, 254 Pac. 372; Barrett v. City of Osawatomie, 131 Kan. 50, 289 Pac. 970; Tarpey v. McClure, 190 Cal. 593, 213 Pac. 983; City of Dawson v. Bolton, 166 Ga. 232, 143 S. E. 119; Boagni v. Mayor and Bd. of Alderman of City of Opelousas, 177 La. 835, 149 So. 494; Field v. Barber Asphalt Paving Co., 194 U.S. 618, 48 L. ed. 1142.

[fol. 59] We are of the opinion that lessors' ground number Two is without merit. The basis of the conclusion is that there is not granted to the royalty owners like power of petition and protest as that granted to the lessees. Under the Act the landowners who have not leased their acreage are classed as lessees.

The question is not the wisdom of granting the right of protest to the lessees while with-olding it from the royalty owners but whether it was within the power of the Legislature so to do. It was within the power of the Legislature to do so because being within its police power to enact the law without the consent of either lessees or royalty owners it was optional with it to require the consent of either. Where privilege is granted to some in such situation the Constitution is satisfied if all similarly situated are treated alike. This statement of the law has been declared in many decisions. A clear-cut statement thereof is made in Taggart v. Claypool, 145 Ind. 590, 32 L. R. A. 586, 44 N. E. 18. The United States Supreme Court, in Field v. Barber Asphalt Paving Co., supra, said:

> "The exact point of objection is that the improvement is not to be made if a majority of the resident owners of the property liable to taxation therefor shall file with the city clerk a protest against such improvement, which privilege of protest is not given to non-[fol. 60] resident owners, thereby discriminating against them. It is well settled, however, that not every discrimination of this character violates constitutional rights. It is not the purpose of the 14th Amendment, as has been frequently held, to prevent the states from classifying the subjects of legislation, and making different regulations as to the property of different individuals differently situated. The pro-

vision of the Federal Constitution is satisfied if all persons similarly situated are treated alike in privileges conferred or liabilities imposed. (Citations omitted). The alleged discrimination is certainly not an arbitrary one; the presence within the city of the resident property owners, their direct interest in the subject-matter, and their ability to protest promptly if the means employed are objectionable, place them on a distinct footing from the nonresidents, whom it may be difficult to reach. Furthermore, there is no discrimination among property owners in taxing for the improvement. When the assessment is made it operates upon all alike. It has been held to be within the power of the legislature of Missouri to authorize the council to order the improvement to be made without consulting property owners. Buchan v. Broadwell, 88 Mo. 31. 'If the legislature saw fit to give to those most directly interested and whose consent could be most readily obtained, the right to protest, such action did not deprive the other persons of rights guaranteed by the Constitution.''

Involved under the Act are the plural rights of production from the common pool. The purpose of the Act is to so adapt the exercise of such rights that the value of the reservoir may be realized to the fullest degree possible by those entitled thereto and according to their respective [fol. 61] shares therein. This can be done only through an intelligent control of the drilling operations. The royalty owners are those who have committed to lessees their right to produce in exchange for a definite share in the production. Such rights have been so committed in reliance upon the ability of the lessees to produce. Neither the fact of nor the amount of the royalty interest presents any problem for solution in establishing unification because same is recognized and fixed by the law. The real problem involves an appraisal and adaptation of the existing problems that rest upon the shoulders of the lessees. By reason of their responsibility the lessees have an interest that is distinctive from that of the royalty owners but it is not adverse thereto because the interests of the latter are dependent upon and must rise or fall with that of the

lessees. By reason of their knowledge of the problems they, necessarily, are in a better position than the royalty owners to appraise the practicability and hence the wisdom of unification. To realize that the information they possess is deemed vital to a determination of the question of unification one needs only to read the showing that is required by the Act to be made. By reason of their activity the lessees are in a position to both attest the wisdom or lack of wisdom of unification and produce the evidence that is determinative thereof. The royalty owners, who by their own acts have completely divorced themselves from the activity, are often not conveniently accessible and could [fol. 62] afford little if any helpful information if available, but they are granted the right of an appeal from the action of the Commission, and this case is an example of its exercise. The distinction between the lessees and the royalty owners as classes in interest and the reason why the Legislature should extend a privilege so responsible to one and not the other is so manifest that it precludes any idea that in doing so the legislative Act was capricious. Such being true there is no basis for holding the Act unconstitutional for that reason.

Lessors' ground Three, that the Act imposes an undue burden upon the royalty, has reference to the provisions of the Act which treats the royalty interest that is in excess of one-eighth of the production as a part of the lessees' working interest which is considered to be seven-eight-s of the production. It is contended that, under the lease contract, the lessor is entitled to the full amount of the royalty run to his credit free from liability for operating expense. That his right in that respect is impaired because such royalty in excess of one-eighth of production is made liable for operating expense.

Under the Act an one-eighth part of the unit production allocated to each separately owned tract is to be regarded as royalty and to be distributed to or among the royalty owners free and clear of unit expense, and the remaining seven-eight-s is designated as a leasehold interest and made liable for the *is designated as a leasehold interest* [fol. 63] *and made liable for the* unit expressly chargeable to such tract. The effect of the unitization upon any royalty interest in excess of one-eighth under any existing

lease and the provision made therefor is reflected in the following (52 O. S. Supp. 1945, sec. 286.9):

> "Subject to such reasonable limitations as may be set out in the plan of unitization, the unit shall have a first and prior lien upon the lease hold interest only in the unitized common source of supply (exclusive of a one-eighth (⅛) royalty interest) in and to each separately-owned tract, the interest of the owners thereof in and to the unit production and all equipment in the possession of the unit, to secure the payment of the amount of the unit expense charged to and assessed against such separately-owned tracts. The interest of the lessee or other persons who by lease, contract or otherwise obligated or responsible for the cost and expense of developing and operating a separately owned tract for oil and gas in the absence of unitization shall, however, be primarily responsible for and charged with any assessment for unit expense made against such tract and resort may be had to overriding royalties, oil and gas payments, royalty interests in excess of a one-eighth (⅛) of the production, of other interests which otherwise are not chargeable with such cost, only in the event the owner of the interest primarily responsible fails to pay such assessment or the production to the credit therefor is insufficient for that purpose. In the event the owner of any royalty interest, overriding royalty, oil and gas payment or other interest which under the plan of unitization is not primarily responsible therefor pays in whole or in part the amount of an assessment for unit expense for the purpose of protecting such interest, or the amount of the assessment in whole or in part is deducted from the unit production to the credit of such interest, the owner thereof shall to the extent of such payment or deduction be subrogated to all of the rights of the unit with respect to the interest or interests primarily responsible for such assessment."

[fol. 64] The importance of the segregation of a definite amount of the total production as royalty is manifest and it

is further attested by the fact it is made an integral part of all leases where the cost of operation is to be borne by the lessee. It follows that such segregation is as fully important where the operation is unitized and operated as one lease. In such situation the question is whether the proportion of the production to be regarded as royalty is reasonable. The amount thereof is not called in question so far as the same affords the basis of the unit operation, but it is held that the effect thereof is to impose an unlawful burden on any royalty interest in excess of the one-eighth, if such there be. Considering as we must that the one-eighth royalty prescribed is reasonable to accomplish the overall purpose, it follows that the right to the exceptional royalty as such must yield to the extent it militates against the plan but should be preserved to the extent it may be done consistently with such plan. We hold that the Act gives full recognition to such right and only varies the method prescribed in the lease for its enjoyment. Prior to unitization such a lessor would be entitled to receive the entire royalty share free from the cost of production. The enjoyment of this right, however, was based upon the obligation of the lessee to produce and so deliver. Under the unitization such obligation obtains upon the unit to the extent of an one-eighth royalty and the obligation of the lessee to account for the [fol. 65] remainder is recognized and declared. The liability of any excess royalty is made possible because for the plan of operation it is accorded the status of a leasehold interest. But by reason of the lease contract treating it as royalty the liability is made secondary and could only obtain where there was a breach of the obligation of the lessee to discharge the operation cost allowable thereto as part of the leasehold interest. We take it that the extent of the right and the assurance of its enjoyment is in substance preserved.

In support of lessors' ground number Four it is urged that the Act authorizes the unit to burden the leased premises beyond the right of the lessee thereof to do so.

If it be true that the Act authorizes the unit to burden any premises beyond the right of the lessee thereof and at the same time in excess of what would be justified for the operation of the unit, such fact, appertaining to be a matter of

detail in the operation of the unit, could not be held to affect the integrity of the Act as a whole because, by the terms of the Act, the provisions are made severable (52 O. S. Supp. 1945, sec. 286.16). Though the Act may authorize such an additional burden it does not require that such burden be placed thereon in derogation of the lessors' rights. And we cannot anticipate that those charged with the operations of the unit will exercise the powers granted in an unlawful manner.

[fol. 66] The 50 per cent provision of Sec. 286.4 has hereinbefore been considered. No rights have been exercised under the 15 per cent provision of Sec. 286.6, though its validity is questioned here. It is unnecessary to determine the constitutionality of this provision at this time. The same is true of the 10 per cent provision of Sec. 286.11 providing for reconsideration by the Commission of the plan in operation and fixed correlative rights thereunder. These undetermined questions are reserved.

Bearing upon the contentions that the order of the Commission is contrary to the evidence there is said:

> "The petition and amended plan of unitization and order of Commission approving the same in form follows generally the requirements of the statutes under which they were prepared and made. The broad issue raised by The Palmer Oil Corporation and other petitioners in error is that the order of the Commission approving the plan of unitization was contrary to the clear weight of the evidence in one or more respects. The petitioners in error also raise the question of constitutionality."

The Act provides that one aggrieved by the order may appeal to this court and defines the jurisdiction and duty of this court on appeal, as follows:

> "* * * The Supreme Court on appeal shall have jurisdiction and authority and it shall be its duty to review the record of proceedings and transcript of evidence and to consider the validity of the order of the [fol. 67] Commission appealed therefrom. On appeal the order of the Commission appealed from shall be regarded as prima facie valid, fair, reasonable and

equitable, but if the order is found to be contrary to the clear weight of the evidence, in any one of such respects, the same shall be vacated and set aside and the cause referred to the Commission for further proceedings not inconsistent with the judgment of the court; otherwise the said order shall be affirmed." (Sec. 286.7).

By reason of the presumption which is expressly made to attend the order of the Commission there is cast upon plaintiffs in error the burden of showing that the order in the respects challenged is contrary to the weight of the evidence and we have repeatedly so held. Croxton v. State, 186 Okla. 249, 97 Pac. (2d) 11; Grison Oil Corp. v. Corporation Commission, 186 Okla. 548, 99 Pac. (2d) 134; Oklahoma Cotton Ginners' Ass'n v. State, 174 Okla. 243, 51 Pac. (2d) 327; Denver Producing & Refining Co. v. State, 199 Okla. 171, 184 Pac. (2d) 961.

The importance of the rule lies in the fact that the formulation and execution of the legislative policy has been entrusted to the Commission because it is thought to be peculiarly experienced and fitted for the purpose and it is not to be contemplated that the courts may substitute their notions of expediency and fairness for that of the Commission. Peppers Refining Co. v. Corporation Commission, 198 Okla. 451, 179 Pac. (2d) 899; Denver Producing & Refining Co. v. State, supra.

[fol. 68] In the light of these governing rules we consider the several alleged grounds of error in making the order.

It is contended that the area of the West Cement Medrano Unit is not limited to one "common source of supply."

Under the Act, a unit must be limited to a common source of supply. The Act does not in express terms define a common source of supply, but there was at the time of the enactment a legislative definition of the term (52 O. S. 1941, sec. 84 (c), now 52 O. S. Supp. 1947, sec. 86.1(c)), and we construe such definition as a part of the Act. Therein, the term is thus defined:

"(c) The term 'Common Source of Supply' shall comprise and include that area which is underlaid or which, from geological or other scientific data, or from drilling

operations, or other evidence, appears to be underlaid, by a common accumulation of oil or gas or both; provided, that, if any such area is underlaid, or appears from geological or other scientific data, or from drilling operations, or other evidence, to be underlaid by more than one common accumulation of oil or gas or both, separated from each other, then such area, as to each said common accumulation of oil or gas or both, shall be deemed a separate common source of supply."

That more than one common source of supply may exist in a given sand appears to be recognized in the statute and in H. F. Wilcox Oil & Gas Co. v. State, 162 Okla. 89, 19 Pac. (2d) 347, we held that more than one common source of supply could obtain in such sand by reason of faults that constitute impervious barriers between segments thereof.

[fol. 69] The existence of faults in the unit area is recognized and the question before Commission was whether the segments of the sand were disconnected by reason of the faults. The finding of the Commission (in paragraph 2) which is directly responsive to the issue is as follows:

"* * * that the said Medrano sandstone underlying said above described lands as aforesaid constitutes a single common source of supply of oil and gas, all parts of which are permeably connected so as to permit the migration of oil or gas or both from one portion of said common source of supply to another wherever and whenever pressure differentials are created as a result of the production or operations for the production of oil or gas from said producing formation; that although faults are known to exist in parts of said common source of supply to another; that said common source of supply of oil and gas has heretofore been designated by the Commission and is generally known as the West Cement Medrano Pool."

The question of the faults in the area and the effect thereof had previously been before the Commission a number of times, and the study and hearings thereon had culminated in orders wherein the Commission found that the whole of the Medrano sand as then developed was in fact

one common source of supply. At the hearing herein the testimony adduced was chiefly that of petroleum engineers and geologists who testified on the basis of both personal surveys made and of an interpretation of the accumulated data in the hands of the Commission. The testimony of [fol. 70] these experts was in direct conflict but that of each was positive upon the issue. Under the circumstances the objection is necessarily addressed to only the weight of the evidence. Under the holding of this court and that of courts generally (Chicago, R. I. & P. Ry. Co. v. Pruitt, 67 Okla. 219, 170 Pac. 1143; 22 C. J. 728, sec. 823) the weight to be given opinion evidence is, within the bounds of reason, entirely for the determination of the jury or of the court, when trying an issue of fact, it taking into consideration the intelligence and experience of the witness and the degree of attention he gave to the matter. The rule should have peculiar force herein where by the terms of the Act the Commission is recognized as having peculiar power in weighing the evidence. Since the evidence before the Commission was competent and sufficient, if believed, to sustain the order we must, and do, hold that the order is sustained by the evidence and that the contention is without merit. Ft. Smith & W. Ry. Co. v. State, 25 Okla. 866, 108 Pac. 407; Bromide Crushed Rock Co. v. Dolese Bros. Co., 121 Okla. 40, 247 Pac. 74.

It is contended that the proposed area of the Medrano sand included within the unit has not been reasonably defined by actual drilling operations.

52 O. S. Supp. 1947, sec. 286.5, provides, in part, as follows:

> [fol. 71] "The order of the Commission shall define the area of the common source of supply or portion thereof to be included within the unit area and prescribe with reasonable detail the plan of unitization applicable thereto.
>
> "Each unit and unit area shall be limited to all or a portion of a single common source of supply. Only so much of a common source of supply as has reasonably been defined by actual drilling operations may be so included within the unit area."

Paragraph 4 of the Commission's Findings of Fact, to which attention is called, is as follows:

> "That the outer boundaries of said common source of supply of oil and gas underlying and by this Order included within the aforesaid Unit Area have been reasonably defined by actual drilling operations, both by the drilling of wells within and the drilling of wells outside said Unit Area; that said Unit Area consists of approximately 3700 acres of land."

It is urged (1) that the Commission does not find that "all portions of the alleged common source of supply included within the unit area has been reasonably defined by actual drilling operations", and (2) that there is included within the unit areas where in the common source of supply has not been defined by actual drilling operations.

There is no merit in the first ground. Paragraph 2 of the Commission's findings, hereinbefore quoted and discussed, expressly finds that the sand constitutes a common [fol. 72] source of supply throughout the area of the unit. The presumption is that same was made on the basis of the required statutory showing. And the Commission in effect so declares in Finding No. 12, where it is said that the plan of unitization "in all respects conforms to and complies with the requirements of H. B. 399 of the 1945 Oklahoma Legislature."

The limits of the pool and of the unit area were determined by the productive boundaries reflected in exhibits prepared by the Geological Committee and based on data and information gained from wells actually drilled to the Medrano sand or to depths sufficient to encounter the sand if present.

Within the unit there are numerous tracts on which no wells have been drilled into the Medrano sand. The source of the common supply thereunder, which is reflected in said exhibits was predicated on the evidentiary force of drilling operations had in other areas.

It is not contended that the exhibits do not reflect the common source of supply under the undrilled tracts nor that the wells drilled elsewhere were not sufficient to show the existence of the supply thereunder—in fact, the expert

witnesses of both plaintiffs in error and defendants in error testified that the drilling operations had were sufficient therefor. The contention is that actual drilling upon the tracts is required by the Act in order to justify a finding of the common source of supply. The contention is thus stated:

> [fol. 73] "Our interpretation of the statute requires the Commission to find that the common source of supply has been reasonably defined by actual drilling operations in respect not only to the outer boundaries but also all tracts therein included, as well as the depth of the common source of supply."

The theory advanced is that the words of the statute, "reasonably defined by actual drilling operations", negative the idea that the finding can be predicated upon drilling operations had elsewhere and that independently of the statutory provision opinion evidence of the existence of the common source of supply under such tracts based on the wells drilled elsewhere is mere conjecture. As supporting the latter contention Myers et al v. Shell Petroleum Corportion, 153 Kan. 287, 110 Pac. (2d) 810, is cited as holding that the opinion evidence of an expert geologist on geological conditions at a point one-half mile distant from the control point was mere conjecture and could not be accepted as law. The court there did not expressly nor in substance hold that such distance from the control point, as a matter of law, made the opinion conjecture, but that by reason thereof and other facts which would preclude the evidentiary force thereof the same was not permitted to go to the jury. However, even if the construction of the holding were justified it would not be persuasive as authority herein where the particularity which is required in a court of law does not obtain. Peppers Refining Co. v. Corporation Commission, supra.

[fol. 74] Actual drilling upon the undrilled tracts or within a definite proximity thereto is neither prescribed by the statute nor by law. In fact, we are of the opinion that each is negatived, the first by the language of the statute and the other by the holding in the Peppers case, supra.

The alleged mandatory force of the statute is predicated upon the use of the word "reasonably" as used in the statute. We think the use of the word precludes rather than justifies the construction claimed. If the word "reasonably" were omitted the words "defined by actual drilling operations" would import absoluteness. The effect of prefixing the word "reasonably" to the words "been defined" necessarily qualifies the import of absoluteness which would obtain without it. In prescribing the formula the Legislature must have had in mind the impracticability of accomplishing the full purpose of the Act if its operation was to be conditioned upon actual drilling on all tracts. There is no prescription touching the places of the drilling operation nor the depth of the wells nor of what must be reflected therein. The only prescription is that the source of supply must have reasonably been defined thereby. The drilling operations required are simply those the evidentiary force of which is sufficient to justify a conclusion, by those capable in law of weighing the facts as to the existence of the source of supply. There is unanimity in the testimony herein that the wells drilled afforded sufficient evidence to define the common source [fol. 75] of supply within the unit area and the Commission so found. We hold that said attack upon the order is without merit.

It is contended that the discovery well in the West Cement field was drilled and completed more than twenty years prior to the effective date of the Unitization Act and, therefore, the Act does not apply to such field and, by reason thereof, there is no authority in law for the order of the Commission.

There is involved a construction of sec. 286.2 of the Act, quoted above.

The West Cement Medrano sand, which is the common source of supply of the unit, was discovered October 15, 1936. The first discovery of oil and gas in the area of the unit was on or about October 17, 1917, but same was in a sand different from the Medrano sand. The question is, which of the wells is the discovery well within contemplation of the statute. If it be the well drilled in 1917 the Commission was without authority to establish the unit.

If it be the well drilled in 1936 the authority to establish the unit is beyond question. Such was the issue before the Commission, and thereon it held:

> "That the West Cement Medrano pool is a field within the meaning of that term as used in the second paragraph of Section 2 of H. B. 339 of the 1945 Oklahoma Legislature; that the term 'field' in ordinary usage has no fixed or definite meaning but is some- [fol. 76] times used to refer to the general area where a number of oil or gas producing formations are found and at other times used to refer to a particular common source of supply or pool; that as used by the Legislature aforesaid, the term was intended to relate to the particular common source of supply or pool sought to be unitized under the Act and not to any general area which in a broader sense could be termed a field; that in effect said Act throughout relates to and deals only with single common sources of supply of oil and gas."

It is said that the word "field" has a commonly accepted meaning which denotes the surface area where there is a production and carries no significance as to the sand from which the production is had and that, in absence of a different meaning, apparent or obvious from the statute or definitely indicated thereby, the word should be construed in accordance with said commonly accepted meaning. It is further said that since the term "common source of supply" is used frequently in the Act while the word "field" is used but once, as indicated, it must be presumed that the word reflected a different meaning than that of the term "common source of supply."

Defendants in error recognize the fact that the ordinary meaning of the word "field" is as contended and that the word appears only once in the Act. They do not question the correctness of said rules of construction where the force thereof is not limited. They contend that the rules are subservient and therefore subordinate to the fundamental rule of construction that the legislative intent is to be gathered from the entire Act. And, as declaring said rule, [fol. 77] and, at the same time giving an apt illustration

of the limitations upon the rules relied on by plaintiffs in error, there is quoted from Meads et al v. Human, 84 Okla. 82, 202 Pac. 797, the first paragraph of the syllabus, which is as follows:

> "In considering a legislative enactment it is not safe to base a construction upon a particular word or phrase, for the language of legislative enactments is not always precise and accurate, and, besides, one portion may frequently be designed to extend, qualify, or limit another so that the meaning of one portion of a statute may depend upon the effect of another. Hence, it is an established rule in the exposition of statutes that the intention of the lawgiver is to be deduced from a view of the whole and of every part of a statute taken and compared together. The several provisions of the statute should be construed together in the light of the general purpose and object of the act and so as to give effect to the main intent and purpose of the Legislature as therein expressed. If possible a statute should be so construed as to render it a consistent and harmonious whole; if different portions seem to conflict, they should, if practicable, be harmonized that construction being favored which will render every word operative rather than one which makes some words idle and nugatory."

In the light of this rule the question is what construction is consonant with the general purpose and object of the Act. That the functions of the Act have reference to a definite sand as the source of common supply and is without reference to other sand or sands that may afford another source of supply within the same field, is without question. As indicated in sec. 286.2, quoted above, the fact of previous development had in the area constituting [fol. 78] the unitized pool, the extent thereof and the methods employed are taken into consideration and the functioning of the unitization plan is required to yield thereto in designated instances. It thus appears that the extent of development in the source of supply that is made subject to unitication was w[illegible]in the legislative mind. If

the well drilled in the field in 1917 had discovered the West Cement Medrano sand the Act would not authorize the unitization. The Act, in terms, makes no reference to any development in any sand other than that to which the unitization is made to apply and it cannot be gathered from the Act that the fact of discovery of other production in the field is material to the operation of the unit. We are of the opinion that the only logical deduction to be made, when considering the Act as a whole, is that the discovery well, in the mind of the Legislature, is that well in the field that discovered the common source of supply which is the subject of the unification. To hold otherwise would not only defeat the legislative intent herein but in other situations as well because the court takes judicial knowledge of the fact major pools have been and may yet be discovered in areas where many years ago oil had been discovered in upper and shallower sands which have become practically if not completely depleted.

The order of the Commission is attacked upon the further grounds (1) the proposed "plan of unitization" is not "fair, reasonable and equitable" as required by sec. [fol. 79] 286.5 of the Act, and (2) the "Division of interest or formula for the allocation of unit production" is not fair, equitable and reasonable as required by said section.

These contentions require no extended discussions. They are directed solely to the weight of the evidence and the most that is shown in the argument is the existence of conflict in parts only of the evidence. Such does not challenge the weight of the pertinent evidence as a whole and for reasons hereinbefore stated does not disturb the presumption that attends the order of the Commission.

Plaintiff in error The Palmer Oil Corporation, a lessee, contends that the order of the Commission is particularly unfair, inequitable and unreasonable as to it as an operator. Comprised within the unit is the S. W. ¼ of Sec. 35, Twp. 6 N., R. 10. W. upon which the Gulf Oil Corporation held an oil and gas lease from the owners. In 1938 Gulf assigned to Palmer all of its right, title and interest therein to the depth of 6000 feet, "retaining the lease as to the oil, gas and casinghead gas, together with all the rights,

privileges and appurtenances thereunto belonging, below the depth of 6000 feet." The 6000 foot subsurface level passes through the Medrano sand by reason of which there is productivity in the sand both above and below said level. Palmer drilled a well to but not beyond said level and ob-
[fol. 80] tained production from said sand therein. Gulf has no well producing from the sand below said level and is not authorized under the Unitization Plan to drill and produce therefrom. The Palmer well was completed during the pendency of these proceedings before the Commission. The order of the Commission fixed the percentage of the authorized lease production that each should receive and hold same to be applicable to the production of the Palmer well. It is contended that the Commission was without authority to permit Gulf to share in such production. And further contended that the percentage division is unfair and contrary to the evidence if Gulf is entitled to so share.

The first contention is predicated solely upon the assumption that the rule of capture obtains. That it is subject to be modified by the State in the exercise of its police power we held in Wilcox Oil & Gas Company v. Bond, 173 Okla. 348, 48 Pac. (2d) 820. And that the right of capture as claimed herein does not obtain where by Act of the State undertakes to protect the correlative rights of owners in a common source of supply, regulate the drilling and distribute the production thereof, we held in Patterson v. Stanolind Oil & Gas Co., 182 Okla. 155, 77 Pac. (2d) 83.

Pertinent to the second contention are the following facts. In the plan of unitization exhibited with the petition of the proponents the percentages of the lease pro-
[fol. 81] duction allotted were Palmer 5.145% and Gulf 2.538%, reflecting a lease total of 7.683%. Speaking generally, the total, or lease percentage, was predicated on the thickness of the sand underlying the lease and such thickness was deduced from the elevations of the top and bottom of the sand as ascertained by the surveys made. And the individual percentages based upon the proportions of the thickness which law above and below the 6000 foot level. With the completion of the Palmer well it appeared as a matter of fact that the top of the sand at

that point lay lower than reflected in the earlier survey. And, such being true, without change in the depth of the bottom of the sand as established, there was reflected at that point a less thickness of sand than was considered in fixing the lease percentage of the pool production. Touching the effect of such discovery the Commission states in its report the following:

> "In addition to the proceedings and notices aforesaid, further mention is here made of the fact that during the course of said hearing, The Palmer Oil Corporation drilled and completed an additional well on a lease owned by it in the aforesaid field, necessitating a relatively slight change in the percentage of interests of the several separately owned tracts in the field shown in 'Exhibit B' attached to the recommended Plan of Unitization, and also necessitating the inclusion of such additional well in 'Exhibit D' attached to said Plan of Unitization."

[Tol. 82] As a result, the original exhibits which reflected said percentages were amended so as to reflect the lease percentage at 7.67294% (same being .01006 less than before) and the shares of Palmer and Gulf therein at 5.51614% and 2.15680%, respectively.

The question before the Commission was the extent the common thickness of the sand on the lease as previously fixed was to be diminished by reason of the deminution of thickness reflected at the point where the well was drilled. Palmer contends in substance that the thickness was 108 feet, while the Commission found same to be 96 feet. The question of the thickness turned chiefly upon the depth of the top of the sand as reflected in said well. The testimony was conflicting. The Commission determined that the weight of the evidence lay in the testimony of one Montgomery, a witness for proponents, which was concurred in by the entire Geological Committee, and not in that of one McKee, a witness for Palmer, who testified to the contrary, and so found. Under the rules hereinbefore announced we cannot say that holding of the Commission is contrary to the weight of the evidence nor that the percentages prescribed thereon are arbitrary.

The Order of the Commission is affirmed.
The Writ prayed in cause No. 33,708 is denied.

Arnold, C.J., and Corn, Halley and Johnson, JJ: concur; Luttrell, V.C.J., and Welch, Davison, and O'Neal, JJ: dissent.

[fol. 83] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

[Title omitted]

ORDER CORRECTING SYLLABUS—Filed July 2, 1951

For Good Cause Shown

It is Hereby Ordered that the third paragraph of the syllabus in the above styled and numbered cause, filed March 20, 1951, be and the same is hereby corrected by deleting the word "of" in the next to the last line of said third paragraph, making said line to read as follows, to-wit:

"Art. I or of the Fifth or Fourteenth Amendments."

Dated this 1st day of July, 1951.

Ben Arnold, Chief Justice.

[fol. 84] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

No. 33336

THE PALMER OIL CORPORATION, a corporation, et al., Plaintiffs in Error

vs.

PHILLIPS PETROLEUM COMPANY, a corporation, et al., Defendants in Error

and

No. 33708

PAUL STERBA and PAUL STERBA JR., a minor, by and through his father and next friend, Paul Sterba, and The Palmer Oil Corporation, a corporation, Plaintiffs in Error

vs.

CORPORATION COMMISSION OF OKLAHOMA, et al, Defendants in Error

WELCH, J., DISSENTING—Filed March 20, 1951

At the outset I would emphasize the thought that it is too difficult to undertake to determine the constitutionality of the compulsory unitization act without in any manner discussing or considering the impact on this legislation of the positive provision therein which grants the unqualified veto power for sixty days to fifteen percent of the lease owners by acreage.

By that provision, considered in its necessary connection [fol. 85] with other provisions, the act speaks for itself and thereby announces, either that it is not a necessary and proper exercise of the police power for conservation, or that it is a delegation of the police power and legislative power of the state to the will or wishes of oil operators or lessees.

In view of the positive language of this veto power provision and its direct connection as an integral part of the

unitization scheme, it remains as a puzzle to me how the court can uphold the act and treat this veto power provision as some character of a separate item which may remain as a question undetermined and reserved for future determination.

It is not contended merely that this veto power provision is a separate unconstitutional part of the act. If that were all it might well be said that if compulsory unitization may be forced upon forty-nine plus percent of lessees and one hundred percent lessors against their will, any possible veto power would be to that extent a welcome escape. But that is not the crux of the matter on this point at all. It is not contended merely that this veto power provisions violates private rights, if it is contended at all that it violates private rights. The complete violation of private rights is accomplished by the overall, and other, provisions of the act. As to this veto power provision, it is in fact contended that such provision is one, and an important one, of the details which demonstrate the unconstitutional [fol. 86] attempt by this legislation to take over, for private gain, the private property rights, and private contract rights of free citizens. With this contention I agree.

In behalf of this act is is contended that the necessity to conserve oil and gas and prevent waste is the source of the state's power to compel unitization and that such necessity authorizes and requires the state to compel unitization. But by provisions of the act itself the act takes this power away from the state and lodges it in lessees, that is, first the power to initiate the proceedings, and second, the veto power for sixty days. This is a negation of the necessity of this power in the state, or an unconstitutional delegation thereof as I view it.

The compulsory unitization order here involved affected about 3700 acres of land embracing 72 tracts under separate ownership, with numerous oil and gas lessees of separate tracts, and several hundred owners of royalty interests in the oil and gas being produced, and to be produced, from what was treated as one common source of supply. At the time of the order, distributed over most of the tracts, but not all of them, there were about fifty

or more wells producing oil and gas, and some additional wells in process of drilling.

[fol. 87] The order, over the objection of some of the lessees or operators engaged in producing oil, and over the objections of numerous landowners and royalty owners, directed the operation of the entire tract as a single unit. The result would be that a committee of the lessees would select *one* operator who would take over all leases and all operation of the entire acreage as to the stated source of supply, and all wells now producing oil or gas would be operated by that one operator, and all future wells would be drilled by that one operator at any or all places in the tracts, without regard to the contracted leases of the tract drilled; that all oil produced from the entire tract, or from any one or several of the 72 separate tracts would be marketed by the one operator, all expenses for operating the aggregate 72 tracts deducted, and the remaining balance distributed by the operator to the various lessees and royalty owners. This distribution would be made without regard to the separate tracts from which the oil came, and without regard to any ratio of production or ratio of expense as to the various separate tracts. That is, the entire tract of 3700 acres was to be drilled and produced, and the oil marketed, as if the aggregate tract constituted a *single unit*, covered by a single lease. The distribution of net proceeds was to be made according to a pre-arranged calculation intended to represent a computation of the present and future oil production value of each separate tract. That is, each separate tract was considered and it was assigned, or there was allocated to it, a stated per-
[fol. 88] centage of the whole unit's future production.

This appeal tests the constitutionality of the legislative act authorizing such action and the power of the Corporation Commission to make such an order, and tests the validity and fairness of the order, and the sufficiency of the evidence before the Commission.

In considering this matter and making the order the Corporation Commission acted pursuant to the provisions of 52 O. S. Supp. 1945, secs. 286.1 to 286.17. That act proceeded as a conservation measure on the premise that it was desirable and necessary in various circumstances

to authorize and provide for unitized management and further development of an oil and gas field or pool found to be a common source of supply, "to the end that a greater ultimate recovery of oil and gas may be had therefrom, waste prevented, and the correlative rights of the owners in a fuller more beneficial enjoyment of the oil and gas rights, protected." It authorizes the Corporation Commission to supervise and administer the act and to order and compel unitized management of whatever should be the proper area of the oil field or pool under consideration. The jurisdiction of the Corporation Commission, however, could not attach unless and until "lessees of record of 50% or more of the area * * * sought to be unitized" should file petition therefor. Then after giving notice in accordance with requirements of general oil and [fol. 89] gas conservation statutes, and hearing all parties who desired to appear either for or against the petition, the Corporation Commission should go forward and order the unitization if it was found that such unitization was proper, and necessary in the interest of conservation, and if the unitization plan suggested by the petitioners or approved by the Corporation Commission was thought to be or was found to be for the common good and to result in general advantage to the owners of the oil and gas rights. Provision was then made that a committee of the oil and gas lessees would select a single operator who would thereafter operate the area involved as a single unit and distribute the net oil production according to the predetermined percentage to the various separate tracts of land involved, or to the lessees and royalty owners of each separate tract. It was t-en provided, sec. 286.6, supra, that at any time within sixty days after the entry of the order creating the unitization unit, lessees of record of fifteen percent of the unit area might file written protest against the creation of the unit and thereupon it should become the mandatory duty of the Corporation Commission to vacate the action theretofore taken and dismiss the proceedings for the creation of such unit. And lessees whether they did or did not join in the original fifty percent petition could join in this fifteen percent protest and destroy the unitization and accomplish dismissal of the proceedings, provided only that such action was taken

[fol. 90] within sixty days of the creative order of the Corporation Commission, and as stated in the majority opinion, any owner of land in the area not leased for oil and gas was to be classified as a 'lessee' of his land for all purposes of the act. I deem it unnecessary to set out further detail provisions of the act except such as are stated here, and such as are generally referred to in other paragraphs of this opinion.

The petition to the Corporation Commission in this instance was signed by lessees of more than fifty percent of the area sought to be unitized, and said petitioners attached thereto a complete plan of unitization set out in great detail and at great length, with their statement of a percentage division or allocation to each separate tract of a stated interest in the future oil production from the aggregate area. And petitioners alleged they considered their stated plan and division to be fair, reasonable and equitable, all as required in section 286.4 supra.

Both lessees and royalty owners appeared and protested, but after notice and hearing the Corporation Commission made findings in favor of the petitioning lessees that unitized management of this area was proper and reasonably necessary for the purposes set out in the act, and that such unitized management would probably result in greater ultimate oil production. And the Corporation Commission approved the detailed plan of unitization pre-[fol. 91] sented by petitioning lessees, and ordered unitization over the objection and protest of those operators and owners of royalty interests who appeared in opposition to unitization as aforesaid.

The unitization act makes special provision for appeal to this court from such an order, Sec. 286.7, supra, and such appeal is authorized under the general oil and gas conservation statutes. 52 O. S. 1941, Secs. 111, 112, 113, and 136, as those sections are referred to in the present act in section 286.7 thereof.

While other serious questions are presented, I think the constitutional attack is controlling. Appellants in effect and in final analysis point out a number of provisions of the act, and objections thereto as it is here applied, which they urge demonstrate several violations of constitutional

provision and of individual constitutional rights. We list them as follows:

1. The act, though purporting to be necessary, and justifiable under police power, for conservation, may only be brought into operation by petitioning lessees of fifty percent or more of the area involved.

2. That after hearing and determination by the Corporation Commission that unitized management is necessary, and will prevent waste, and will probably result in greater recovery at no increase in net costs, and that the unitization is for the common good and to the best advantage [fol. 92] of all; and after the Corporation Commission has ordered the unitization plan into effect, and after unitized operation has commenced, the order may in effect be "vetoed," and the unitization vacated and abolished by the mere protest against it in sixty days of lessees of fifteen percent of the unit area affected.

3. That the act recognizes only lessees in the formation of the unit, in the percentage that has the veto power in sixty days, and in the committee management of the unit, to the exclusion of any participation therein by the landowner lessors and all others who have fixed interests in the oil being produced and thereafter to be produced.

4. That the act purports to authorize abrogation of contract rights and relieve lessees of contract liabilities and that the unification does abrogate or supersede all contracts between landowner lessors and their chosen lessees, and that is accomplished upon, or by, action of the lessees alone.

5. The same objections as affecting others than original lessors, who have theretofore acquired fixed interests in the oil production.

[fol. 93] 6. That the act authorizes contingent operating expense liens against royalty interests which theretofore by express contract had been protected against any such liens and against any share or portions of operating expenses.

7. That by the fixed purpose of the act, and by the unitization, no lessee can get that for which he contracted, that is, his full portion of the oil produced from the tract on which he took his oil and gas lease.

8. That by the fixed purpose of the act, and by the unitization, no landowner lessor can count on receiving that for which he contracted, that is, his fixed share of the oil and gas produced from his land, and the result must be that oil taken or produced from one man's land is used in part to pay royalty to another who owns other and separate land in the unit area.

9. The same objection as applies to others than landowner lessors who have acquired fixed interests as royalty or shares of production.

10. That the act and unitization plan abrogates or nullifies various specific provisions of lessor lessee contracts such as the right to receive delay rentals, rights to free gas for individual use, rights of lessor as against excessive surface use for pipe lines, or such excessive use for tank construction.

[fol. 94] 11. That as to objecting lessees the act operates to take the oil and gas leases acquired by them and assign or set over such leases to the unit for unitized operation for the benefit of all, thus in direct effect taking private property for private use and private gain without consent of the owner.

12. That as to land in the so-called unit area not leased for oil and gas operation, the act operates to compel the owner to submit his land to drilling operations whether he wishes to do so or not, and that for direct benefit to other private persons or corporations, and that as concerns the owner of any such land the act operates in effect to coerce and compel him to engage with others in the oil production business whether he wishes to do so or not.

To state the above numbered objections would seem to demonstrate that the legislative act and the unitization plan do transgress constitutional provision and do violate constitutional rights.

As to objection number one, the proponents of unitization contend that the act is justified under the police power and as a conservation measure. But that justification and purpose loses much force by the fifty percent provision above noted. If the State may compel unitization under its police power and for conservation, then why should not such power be exercised without depending upon the will

[fol. 95] and wishes of fifty-percent of the lessees of the area affected? It would seem that if there is such justification it would exist as well where a majority objected to commencement of the proceedings as in the case where fifty percent were willing to move forward as petitioners. On this point the proponents cite cases upholding "proration" and "spacing." But when the State, acting through the Corporation Commission, exercises those powers, there is no dependence in the first instance upon the assent of fifty-percent.

What we have just said applies with even more force to objection number two. It is a most unusual kind of exercise of police power and exercise of the power of conservation to provide that after the Corporation Commission has investigated and made solemn findings as to necessity, feasibility, applicability to prevent waste, general benefits and common good, and has put into operations the exercise of the police power for conservation, that the whole thing may be nullified by the mere written protest of holders of fifteen percent of the lease rights affected. I am not impressed with the argument that a regulation is so necessary for conservation and of such urgent character as to justify such drastic action under the police power of the state, and yet be under such control of the persons most affected as to be subject to veto by fifteen percent after it has been implemented by all of the hearings, findings and orders employed to put it into effect.

[fol. 96] On this point the proponents of unitization cite cases upholding the Barbers' Act and the Dry Cleaners' Act where prices are fixed by percentage of those most affected. But in those cases the prices fixed are not maximum but are minimum prices and the individual operator is left to operate his own business. In those instances there is no taking over of the individual business and the operation of all such businesses as a unit by one operator, for the so-called general good of all interested parties.

It seems to me that in objections one and two there is demonstrated entirely too much delegation of the legislative power, or perhaps it is better stated, too much delegation of the police power of the State to persons financially interested in the regulation itself, and that on account of

such delegation the act and the unitization plan cannot find constitutional sanction.

As to the third objection, while the oil and gas lessees may be said to be the persons most interested in the application of unitization, the landowner lessors and other royalty owners have a fixed interest in the oil being produced and to be produced, and it is pointed out that the act and the plan are so framed as to allow such generous consideration of the lessees with no consideration or participation whatever by lessors or royalty owners. The oil field or source of supply may only be brought into the [fol. 97] jurisdiction of the Corporation Commission for application of the State's police power and conservation power by action of fifty-percent of the lessees. When the unitization plan is put into effect it is operated and managed by a committee composed exclusively of the lessees. The advance calculation of the various interests to govern distribution of production was set up by the petitioning lessees. And during the first sixty days of operation of the unit it is to the stated percentage of lessees that the veto power is given. The interests of the lessors and lessees differ only in degree, that is, in percentage of ownership of the production. Equal protection of the law would seem to dictate that such exclusive control could no more be given to the lessees to the exclusion of the lessors than could such exclusive control be given to the lessors and royalty owners to the exclusion of the lessees. Therefore the constitutional right to a- equal protection of the law is violated.

As to objection number four, of course the act authorizes and the plan effectuates almost complete abrogation of the lease contracts between lessors and lessees. About the only provision of the lease contract which is preserved is the provision as to the ratio of sharing between lessor and lessee, and that provision is not fully preserved if the lease provided for a royalty of more than one-eighth of the oil [fol. 98] produced. That provision is not fully sustained for the further reason that in unitization the lessor does not continue to receive the contracted share of the oil produced from his land, but, instead, he receives the contracted share of the percentage of the overall production

which is allocated to his land. This may of course be more or it may be very much less than the oil produced from his land. Although the overall purpose of the act and of the plan is to increase ultimate production, we cannot say with certainty that every lessor will receive as much compensation or compensation of equal value to him under unitization, as he would under separate drilling and production of his land as he contracted for with his selected lessee.

What I have said also applies to objection number five. And as to both objections four and five it appears that even the royalty share which the owner was entitled by contract to receive may be reduced by operation of the unitization plan, or at least there may be or may come into existence a lien on some part of the royalty share for operating expenses. Such a lien or the probability of such a lien is specifically provided by section 9 of the act, which is section 286.9 supra, and is carried forward by express provision of the unitization plan submitted by the petitioners, and approved by the Corporation Commission.

[fol. 99] I observe of course that functioning of the well spacing law or of the proration law operators in some measure to affect the contracts between lessor and lessee. But such effect is only upon what might be the desire of the lessee to drill more wells or the desire of both lessor and lessee to produce oil more rapidly. As to those operations there is nothing like the taking over of contract rights which is here evident. We observe the authorities justifying the abrogation of contract rights in the interest of or in subservience to the police power of the State. But we do not observe authority for such an abrogation of contract rights as is here evident by action of the lessees for their own individual interest. And we are convinced that this act and the unitization plan impair and abrogate contracts and contract rights far beyond any constitutional authorization.

What we have said above disposes somewhat of objection number six, but we should emphasize it with this further suggestion. Though royalty owners, by express contract with the original lessee operator, might be specifically entitled to receive the agreed share of production as royalty, without any part of the operating expense, yet, if the aggre-

gate royalty share exceeds 12½% or ⅛th, the excess would be subject to being burdened with liens for operating expenses if they were not paid by the lessee operator who agreed to pay them. It is pointed out that in case any such [fol. 100] royalty owner should be compelled to pay any portion of operating expenses that by subrogation he would have a claim therefor against his contract party who agreed to pay them, but in that I see no fair substitution for the contract right to receive the royalty free of any charges for operating expense.

As to objection number seven, it is clear from the act and the unitization plan that no lessee is to receive the agreed portion of the oil which he may produce from his leased premises. Any plans he may have made for his drilling campaign and production and marketing procedure are necessarily cast aside. In lieu thereof the operator, chosen by a majority of the committee, will develop the lessees' premises as much or as little as they determine. The lessee will be paid not his share of his production or the production from his leased premises, but his share of the pre-determined percentage which the calculated productivity of his lease tract bears to the aggregate pre-determined productivity of the entire area.

In this action I observe, of course, that if such lessee controls sufficient area he may veto the act and the plan if he does so within sixty days. And in considering purely the economics of the act and plan it might seem that if more than eighty-five percent find the plan wholesome and profitable and desirable, the remaining less than fifteen percent should not be heard to complain. But it has ever been true [fol. 101] that constitutional rights have not been sustained or withheld depending upon the service or advantage thereof to majorities. Most often constitutional prohibitions or constitutional rights have been enforce- in favor of and for the protection of minorities, no matter how small the percentage so occupied by the minority in question.

What I have said as to objection number seven applies with equal force to objection number eight and nine considered in behalf of landowner lessors and other royalty owners. It is inevitable that in many instances the royalty received must be substantially less than the fixed royalty

share of the production from the individual tract of land. It necessarily follows that oil produced from one man's land would be taken in part to pay royalty to another who owned a separate tract of land in the unit area. While this might be justified under some proper type of exercise of the State's police power for conservation, I think clearly it cannot find constitutional sanction in the manner undertaken by this act and this plan as aforesaid.

As to stated objection number ten, the rights specially mentioned are rights of value. In Wise v. Tabor, 201 Okl. 428, 206 P. 2d 970, this court recently considered the rights of a surface owner or lessee as against excessive surface use by the oil operator in the construction of storage tanks, and that right was held to be of substantial value, so that a threatened invasion of such right could be prevented by injunction.

[fol. 102] As to stated objections numbered eleven and twelve it must be conceded of course that this taking of private property is accomplished without consent of the owner and results in private use and private gain. But the proponents of this unitization would say that the taking resulted in or was for the joint use and gain of the owner and the others interested in the unit, and that the taking resulted in no loss to the owner, but, on the other hand, resulted in gain to him. That is nothing more or less than to argue that the taking was not without adequate compensation. But the Constitution, in Art. 2, Sec. 23, prohibits such a taking *with or without compensation.* Thus a violation of this provision cannot be measured by, or condoned on account of, compensation, no matter if the compensation is wholly adequate or even exceeds the value of the property taken. The constitutional inhibition is against such a taking without consent. I submit that a taking in violation of this constitutional provision for the private gain of others jointly with the owner, or such a taking which inures to the benefit of others along with the owner, but against his consent, is just as much a violation as it would be if the taking produced gain solely to others than the owner.

We observe the extensive argument of the over-all benefits of the unitized operation of an oil field or a common

[fol. 103] source of supply. It may be that in the aggregate the production expense would be reduced and the ultimate recovery of oil be increased. It might be that ultimately each lessee would receive as much money or profit as any one of them could receive by regular private operation. It might be that ultimately each contract would return as much in royalty payment as any one contract would return under private operation. We do not understand that it is contended to be certain that every lessee and every lessor will receive as much or more under unitization than he might receive under ordinary separate tract or individual management. If it were so contended it would be based somewhat on theory or speculation. In any event, while those items are interesting they are not controlling on the constitutional question. The most we can say here is that a large percentage of the lessees believe this plan to be wholesome and good, and profitable and desirable; that the percentage of lessees who find and believe the plan unprofitable as to them, and grievously undesirable, and think it to be discriminatory and detrimental to their property interest is a small percentage comparatively, yet it is a percentage of large financial investment and of large potential oil value. Likewise, the royalty owners who find the plan objectionable and believe it to be unfair, and find the original calculation of percentage of interest to be discriminatory against them and to be [fol. 104] inequitable, represent rights and interests which in the aggregate run into a large sum. Indeed, the royalty interests of some of the landowners may mean more to them than the oil company investment in this area would mean to any one of the companies who as lessees initiated this proceeding, calculated percentages of ownership, and who operate the unit.

This is a large oil field. It appears that the interests owned even by small royalty interest owners may be of substantial value. Certainly the interest of every protesting lessee and of every protesting lessor or royalty owner merits full protection. That full protection under our Constitution seems to me to require that each landowner and his lessee be permitted to manage their own premises in drilling for and producing oil therefrom, subject only

to reasonable and necessary regulation by the State under its police power. At least that must be our conclusion as concerns any application of this effort to take over this area under the unitization act and plan here considered.

In this jurisdiction we have always gone forward in the conservation of oil and gas and in the protection of correlative rights. The State, through the Corporation Commission, has extensive power in the prevention of waste. I consider it right that the State should have great power to exercise necessary controls in the production and withdrawal of this natural resource. But surely individual [fol. 105] enterprise should be encouraged, and individual property rights and contract rights should be upheld. The State should have much power to regulate, and insofar as necessary to restrict and control the production of oil and gas. But it should not be necessary that the State take over production theretofore carried on by landowner and lessee. Much less should it be necessary for the State to authorize a majority group of lessees to take over the operations of other lessees, to the objection and detriment of minority lessees, and over the objection of all royalty owners. We do not mean to say that in this case all of the royalty owners object to this act, or to this plan of unitization, but as we read the act it would make no difference if every royalty owner did object and complain.

On this point it is somewhat significant that some lessees and some royalty owners desire this unitization while other lessors and other lessees object and protest. It would seem inevitable that in final analysis some lessees will obtain a greater return by unitization than they would without it, and that inevitably some lessees will receive less return with unitization than they would without it. The same applies exactly to landowner lessors.

In Carter v. Carter Coal Company, 298, U. S. 238, 80 L. ed. 1160 the Court considered the Federal "Bituminous Coal Conservation Act of 1935" and held the act unconstitutional for some of the objectionable features which find [fol. 106] parallel in the State Act here considered. In the opinion (L. ed. 1189) the Court said:

> "The power conferred upon the majority is, in effect the power to regulate the affairs of an unwilling mi-

nority. This is legislative delegation in its most obnoxious form; for it is not even delegation to an official or an official body, presumptively disinterested, but to private persons whose interest may be and often are adverse to the interests of others in the same business. * * *"

This language applies with force to the provisions of this Act which confer power upon the majority in the first instance to say whether the Corporation Commission shall ever acquire jurisdiction. If that is legislative delegation in a very obnoxious form, then how would we characterize the more obnoxious delegation to fifteen-percent of the operators to nullify the whole proceedings by a mere protest in sixty days? This protest they may make without showing any reason therefor, or for any reason or for no reason.

In Washington ex rel v. Roberge, 278 U. S. 115, 73 L. ed. 210, The Supreme Court considered an ordinance in reference to the location of a philanthropic home for children or old people when two-thirds of the owners of property within 400 feet should consent. The Superintendent who passed upon applications for building permits denied the application to build such a home solely because of the applicants' failure to furnish such consents, and in reference to the ordinance the court said on pay- 214 L. ed as [fol. 107] follows:

"The superintendent is bound by the decision or inaction of such owners. There is no provision for review under the ordinance; their failure to give consent is final. They are not bound by any official duty, but are free to withhold consent for selfish reasons or arbitrarily, and may subject the trustee to their will or caprice. Yick Wo v. Hopkins, 118 U. S. 356, 366, 368, 30 L. ed. 220, 225, 226, 6 Sup. Ct. Rep. 1064. The delegation of power so attempted is repugnant to the due process clause of the 14th Amendment. Eubank v. Richmond, 226 U. S. 137, 143, 57 L. ed. 156, 158, 42 L. R. A. (N. S.) 1123, 33 Sup. Ct. Rep. 76, Ann. Cas. 1914B, 192; Browning v. Hooper, 269 U. S. 396, 70 L. ed. 330, 46 Sup. Ct. Rep. 141."

Applying that rule to the act before us the Corporation Commission is bound in the first instance by the decision or inaction of 50 or 51 percent of the oil operators or lessees. The State, acting through the Corporation Commission, may not take an initial step toward this exercise of the police power for conservation of oil until and unless fifty-percent of the operators will it to be so. Thus, 51 percent or 50 percent plus, may in every instance prevent even the inception of a proceeding looking toward conservation of oil and gas by unitized operation.

And as to continuing jurisdiction of the Corporation Commission and as to continuation of the operation under unitization, the Corporation Commission is bound for sixty days by the decision or inaction of lessees of fifteen-percent of the area. The lessees or operators above men-[fol. 108] tioned, in exercising their preference or their will in the instances above stated, are not bound by any official duty, but are free to act or withhold action for private or selfish reasons or arbitrarily, and to the extent just noted they may in fact subject the unitization proceedings to their will or caprice.

It seems clear to me that this court should conclude this delegation of power so attempted to be repugnant to the due process clause of the Constitution.

In Eubank v. Richman, 226 U. S. 137, 57 L. ed. 156, the Supreme Court considered a city ordinance enacted under a statute of Virginia which ordinance provided, in substance, that when the owners of two-thirds of property abutting on any street should request it, a committee on streets should establish a building line not less than 5 nor more than 30 feet from the street line, with provision for penalty for violation of such property line establishment. The State Court upheld the legislation, but the United States Supreme Court held that it violated the 14th Amendment to the Federal Constitution in that such enactment amounted to a deprivation of property without due process of law, and denied equal protection of the law.

Applying that rule here I must conclude that this act is equally invalid. It deprives operators and landowners of [fol. 109] property without due process of law, and it like-

wise deprives some operators and all of the landowners or owners of royalty interests of equal protection of the law.

While the original 50% petition requirement standing alone would not or might not invalidate the act, it must be considered along with the other provisions as to the 15% veto power, and as to complete exclusion of all others than lessees. When so considered the 50% petition provision is some indication or demonstration of the overall length to which the act goes. And when all provisions of the act are considered we must hold that the length to which it goes transcends legal and constitutional authority.

As touching upon these points our attention is directed to various provisions included in our statutes under the title on "Waters and Water Rights." (Title 82 O. S. 1941) Those provisions deal with the making of various property improvements such as irrigation, drainage, flood prevention, stream channel control, land reclamation, and the like, and the construction of public water works. Since the cost of such improvements must be borne by the property owners or persons interested they are given voice as to whether the project shall exist or not. Those provisions bear no strict analogy to the act here involved. Those provisions are more nearly analagous to principles or provisions of [fol. 110] general government where the will or wishes of the people govern as in the creation of some of our municipal subdivisions or the voting of bonds for improvements or utilities.

For the reasons stated, we conclude that the act violates Art. 2, Sec. 7 of the Constitution in that said act operates to deprive persons of property without due process of law, and said act violates Art. 2, Sec. 15 of the Constitution in that it operates to impair the obligation of contracts, and said act violates Art. 2, Sec. 23 of the Constitution in that it operates to take or damage private property for private use, and specifically authorizes the taking and using of private property for private gain without consent of the owner, and said act violates Art. 2, Sec. 24 of the Constitution in that its operation purports to take private property for public use without just compensation, and said act violates Art. 4, Sec. 1, and Art. 5, Sec. 1 of the Constitution in that it purports to accomplish an unau-

thorized delegation of the legislative power and of the police power of the State.

It is suggested the conclusion that this compulsory unitization act is unconstitutional might destroy or deny or in some manner impinge upon the power of the Legislature generally to regulate the coequal rights of owners or oper- [fol. 111] ators to take oil and gas from a common source of supply. However, such result would in no sense be accomplished or indicated or intended. The Legislature does have such power, including the power to make private contracts conform to or submit to the necessary police power of the state, and has well exercised that power in providing for "well spacing" and "proration," and in making the various other provisions under which the taking of oil and gas by any and all persons entitled to take it is regulated. This case concerns only the authority of the Legislature to deal with such conservation and such rights *in the manner in which this act deals with such subjects.* In that consideration the test is whether the act is violative of constitutional provisions. This court must not substitute court views for legislative views as to methods of conservation or protection of coequal rights, but this court must discharge its duty to measure this act by the constitutional requirements as to the protection of all rights.

No decision is cited which has upheld such an act or anything like it.

I am authorized to say that Vice Chief Justice Luttrell, and Mr. Justice Davison and Mr. Justice O'Neal concur in this dissent.

[fol. 112] IN THE SUPREME COURT OF THE STATE OF OKLAHOMA

No. 33336

THE PALMER OIL CORPORATION, A CORPORATION, ET AL.,
Plaintiffs in Error,

vs.

PHILLIPS PETROLEUM COMPANY, A CORPORATION, ET AL.,
Defendants in Error.

AND

No. 33708

PAUL STERBA AND PAUL STERBA, JR., A MINOR, BY AND THROUGH HIS FATHER AND NEXT FRIEND, PAUL STERBA, AND THE PALMER OIL CORPORATION, A CORPORATION,
Petitioners,

vs.

CORPORATION COMMISSION OF OKLAHOMA, ET AL., Defendants.

O'NEAL, J.,—Dissenting:

I agree with the views expressed by Mr. Justice Welch in his dissenting opinion.

It is my judgment this unitization act under the guise of preventing waste in the production of oil and gas from the earth transcends, to an unwarranted and unreasonable degree, regulation of the production of natural resources, and enters the forbidden zone of taking property out of the hands of the owners and placing it in the hands of third [fol. 113] persons as individuals and not as a state instrumentality for the purpose of operation, without the consent of and in violation of their rights.

As I view this Act, it is an improper, unjustified and illegal delegation of police power by the state to private individuals, or corporations acting in a private capacity, as distinguished from acting in the capacity of a duly constituted state instrumentality, answerable to the state. It may be that the state may create a state instrumentality

and vest it with the police power for such purpose, making it answerable to the state for its activities and results, but certainly the state has no power under its constitution, or the constitution of the United States to delegate the police power to private individuals or private corporations for such a purpose, or for that matter, any purpose.

[fol. 114] IN THE SUPREME COURT OF THE STATE OF OKLAHOMA

No. 33336

THE PALMER OIL CORPORATION, A CORPORATION, ET AL., Plaintiffs in Error,

v.

PHILLIPS PETROLEUM COMPANY, A CORPORATION, ET AL., Defendants in Error.

AND

No. 33708

PAUL STERBA AND PAUL STERBA, JR., A MINOR; BY AND THROUGH HIS FATHER AND NEXT FRIEND, PAUL STERBA, AND THE PALMER OIL CORPORATION, A CORPORATION, Petitioners,

v.

CORPORATION COMMISSION OF OKLAHOMA, ET AL., Defendants.

DAVISON, J., Dissenting:

I concur in the dissent written by Mr. Justice Welch.

I believe the majority opinion goes much farther than any opinion ever written on the subject of conservation under the police power of the state. If the Act in question and the order of the Corporation Commission thereunder can stand at all it is only because of the proper exercise of police power for the conservation of oil and gas and the prevention of waste thereof. Many decisions hold, how-[fol. 115] ever, that such power must be reasonably exer-

cised, and that private rights should not be interfered with to a greater extent than is reasonably required by a proper exercise of the power, taking into consideration the legitimate object to be accomplished. Grison Oil Corp., et al. v. Corporation Commission, 186 Okl. 548, 99 P. 2nd 134. Under the record involved herein, I am of the opinion that the power exercised by the Corporation Commission is unreasonable, unjust and unfair.

O. S. A. Title 52, section 286.6 of the Act in question provides, as follows:

> "If at any time after the filing of a petition for the creation of a unit and within sixty (60) days after the entry of an order by the Commission approving the creation of the same, lessees of record of fifteen percent (15%) or more of the proposed unit area, if prior to the entry of the order by the Commission, or lessees of record of fifteen percent (15%) or more of the unite area as defined by the approved plan of unitization and order of the Commission, if after the entry of such order, shall file written protest with the Commission against the creation of the unit, the Commission shall vacate all action of any kind theretofore taken and dismiss the proceedings for the creation of such unit."

This provision of the Act denies lessors equal protection of the law. The Act gives a percentage of the lessees alone the opportunity to instigate proceedings for a proposed unit area, and at the same time affords fifteen percent of the lessees the right to nullify the proceedings. It therefore gives the lessees the vehicle to promulgate a unit area, and in the same clause gives the lessees another vehicle with which to backpedal therefrom and annul all pro- [fol. 116] ceedings thereunder. By this provision it appears the Act creates an improper delegation of the police power and legislative power of the State to the will and opportunities of oil operators or lessees. The Act is therefore legislation which benefits the individual lessees and operators rather than being a conservation measure.

The cases relied on in the majority opinion involve the pooling or spacing of small or irregular shaped tracts while

the unit involved herein covers approximately 3700 acres of land consisting of 72 separately owned tracts with several hundred royalty owners.

I am of the opinion that the legislature, by the passage of the referred to Act has created a Frankenstein, under the guise of conservation.

[fol. 117] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

[Title omitted]

The Clerk is hereby directed to enter the following orders:

[Title omitted]

33,336

33708

ORDER EXTENDING TIME TO FILE PETITION FOR REHEARING—April 3, 1951

Plaintiff in error granted until May 4, 1951, to file petition for rehearing in the above cause.

Ben Arnold, Chief Justice.

[fol. 118] [File endorsement omitted]

CD No. 33336

IN SUPREME COURT OF OKLAHOMA

IN THE MATTER OF THE PETITION FOR THE CREATION OF THE WEST CEMENT MEDRANO UNIT HAVING FOR ITS PURPOSES THE UNITIZED MANAGEMENT, OPERATION AND FURTHER DEVELOPMENT OF THE WEST CEMENT MEDRANO COMMON SOURCE OF SUPPLY OF OIL AND GAS, IN CADDO COUNTY, OKLAHOMA, THE DEFINING OF THE UNIT AREA THEREOF AND THE PRESCRIBING OF THE PLAN OF UNITIZATION APPLICABLE TO SUCH UNIT AND UNIT AREA

PETITION OF PLAINTIFFS IN ERROR FOR RE-HEARING—Filed May 1, 1951

Come now the Plaintiffs in Error named and listed on pages 6, 7, 8, 9, and 10 of the brief of Plaintiffs in Error filed herein by Hatcher & Bond by Reford Bond, Jr., Chickasha, Oklahoma and L. N. Davis, and respectfully represent to the Court that on the 20th of March 1951 a Decree of Judgment was rendered by the Court in said Cause decreeing:

(1) That the legislative act 52 O. S. A. Sections 266.1 to 286.17 known as The Unitization Act is not contrary to constitutional provision requiring due process of law.

(2) That the police power of the State extends to (a.) defining correlative rights of owners in a common source of supply of oil and gas (b.) providing for 1. management, 2. operation, 3. further development of the common source of supply 4. distributing the proceeds therefrom among those entitled thereto.

(3) That said act is not violative of Section 7, 15, 23, or 24 of Article 2 or Section 1 of Article 4 or Sections 1 or 51 of Article 5 of the Constitution of the State of Oklahoma, nor violative of Section 10, Article 1 or of the 14th amend-
[fol. 119] ment to the Constitution of the United States.

(4) That the act does not involve an unconstitutional delegation of legislative power by the provision which requires the petition of lessees of record of more than 50%

of the area of the common source of supply in order to give the Corporation Commission jurisdiction under the act.

(5) That the order of the Corporation Commission is not contrary to law or evidence.

Thereafter this Court, by order entered April 3, 1951, extended the time for filing Petition for Re-Hearing by the Plaintiffs in Error to May 4, 1951 and that this petition is filed within the time allowed by the rules and order of this Court.

The Plaintiffs in Error call the Honorable Court's attention to the fact that said decision overlooked the questions decisive of the case and duly submitted by counsel as follows:

Part One

(A) To permit a majority ownership of the area of a common source of supply of oil and gas to appropriate the property of the minority ownership and to fix the compensation of the minority is not due process of law. (The Corporation Commission has given no discretion in approving the appropriation of the property or the amount of compensation which does not amount to an adjudication.)

(B) Police power of the State has *never before been extended to* (1) defining correlative rights of owners in a common source of supply of oil and gas, (2) to providing for (a) management, (b) operation, and (c) further de- [fol. 120] velopment of the common source of supply and (d) distributing the proceeds therefrom among those entitled thereto; *but even if such extension is lawful* and constitutional, *it can be enacted constitutionally only if* the provisions of the act are reasonable and not discriminatory. It is neither reasonable nor non-discriminatory to permit a majority ownership of a common source of supply to (a) appropriate the property rights, plants and works of the minority without a governmental supervision or restraint, (b) define the correlative rights of the owners and (c) manage, operate and further develop said property and distribute the proceeds *without adjudication or governmental supervision or restraint whatsoever*, neither the majority or minority ownership should have such privi-

leges or rights under the constitution because if given to either, it would be a discrimination against the other. The appropriation of properties to be non-discriminatory, must be pursuant to judicial act, and the same is true of the compensation of the minority and majority ownership for their damages, if any, as well as the division of the proceeds of production among the persons entitled thereto. The same is true of the subsequent management and operation and development of the property. If it is not subject to the supervision of the government or some disinterested party, the minority ownership is discriminated against. It is unreasonable to permit the majority ownership of a group of *seperate* independent non-contracting parties to take over the property of the minority without judicial action. Each person having an interest or right in the property to be taken is entitled to his day in court and to deprive him of this right is unreasonable and a discrimination in favor of the majority ownership because since [fol. 121] the majority are taking the property and fixing the compensation of the minority as well as their own, they do not need an adjudication.

(C) The act is violative of Section 10 of Article 1 of the 14th amendment to the Constitution of the United States and of the above quoted sections of the Constitution of the State of Oklahoma for the reasons above stated and these additional reasons: (1) It impairs the rights of contracting parties unreasonably. The act expunges all of the contractual rights of the lessors stated in their lease contracts and relieves the lessors of all obligations placed on them by the express and implied terms of said contracts. It is not necessary to do this to accomplish the unit operation of a common source of supply of oil or gas and is therefore arbitrary and capricious as well as unreasonable. (2) It impairs the rights of contracting lessors discriminately. The act expunges all of the contractual rights of the lessors covenanted to them in their lease contracts and relieves the lessees of all obligations placed upon them by said contracts. To accomplish this abolition of the contract the lessee only can start the machinery and he only can mete out to the lessor his compensation for loss of contractual

rights and relief of the lessee of heavy burdens thus clearly discriminating against the lessor. The unit operation of a common source of supply could just as well be accomplished without such discrimination because the lessors could be given the same equal rights to start the machinery and the compensation for loss of contractual rights and the relief of the lessees from heavy contractual burdens could be fixed by judicial consideration or a disinterested [fol. 122] tribunal subject to judicial review and approval.

(D) The lessors have submitted authority that the provision of the act requiring lessees of 50% of the area of the common source of supply to petition for the unitization is unconstitutional and discriminating against the lessors. The lessors have never contended that said provision was a delegation of legislative power but the lessors have always contended that the provision authorizing the lessor to fix the compensation of the lessors for the expungement of their contractual rights under their leases and the relief of the lessees of heavy contractual burdens under said leases with an approval that amounts to no approval at all is an unconstitutional delegation of judicial and legislative power.

Part Two

That said decision is in conflict with express constitutional provisions and controlling decisions which have been overlooked by the Court to-wit:

1. Article 2 Sections 23 and 24 of the Constitution of the State of Oklahoma is quoted as follows:

"Section 23. Private Property—Taking or Damaging for Private Use

No private property shall be taken or damaged for private use, with or without compensation, unless by consent of the owner, except for private ways of necessity, or for drains and ditches across lands of others for agricultural, mining, or sanitary purposes, in such manner as may be prescribed by law.

"Section 24. PRIVATE PROPERTY—PUBLIC USE—CHARACTER OF USE A JUDICIAL QUESTION

Private property shall not be taken or damaged for public use without just compensation. Such compensation, irrespective of any benefit from any improvements proposed, [fol. 123] shall be ascertained by a board of commissioners of not less than three freeholders, in such manner as may be prescribed by law. The commissioners shall not be appointed by any judge or court without reasonable notice having been served upon all parties in interest. The commissioners shall be selected from the regular jury list of names prepared and made as the Legislature shall provide. Any party aggrieved shall have the right of appeal, without bond, and trial by jury in a court of record. Until the compensation shall be paid to the owner, or into court for the owner, the property shall not be disturbed, or the proprietary rights of the owner divested. When possession is taken of property condemned for any public use, the owner shall be entitled to the immediate receipt of the compensation awarded, without prejudice to the right of either party to prosecute further proceedings for the judicial determination of the sufficiency or insufficiency of such compensation. The fee of land taken by common carriers for right of way, without the consent of the owner, shall remain in such owner subject only to the use for which it is taken. In all cases of condemnation of private property for public use or private use, the determination of the character of the use shall be a judicial question."

(a) The Unitization Act provides for the taking of the minority owners' property and the taking of the lessors' contractual rights and relief of the lessees of heavy contractual burdens under said leases and the taking of the lessors royalty provided for in said leases and authorizes the compensation there for to be fixed only by the majority owners. These provisions of the act clearly violate the above quoted provision of the constitution of the State [fol. 124] of Oklahoma in that they clearly deprive the minority owners and lessors of their property without due process of law. The fact that the fixing of the compensation of the majority owners must be approved by the Cor-

poration Commission does not alter the fact and it will be further noted from an examination of the act itself that the Corporation Commission has no choice but to approve the compensation as fixed by the majority owners because the act specifically provides that if the Corporation Commission finds certain conclusions to be true, that they must approve the compensation as fixed by the majority owners. The certain conclusions set out in the statute are a reiteration of the principles of conservation and prevention of waste of oil and gas that the Corporation Commission is constitutionally committed to find true whereever met. We therefore say that the Corporation Commissions' approval of the compensation fixed by the majority owners is automatic and amounts to no approval at all. The Commission is not a Court of general jurisdiction and cannot decree interests in real estate unless such jurisdiction is expressly conferred by statutes or constitution.

(b) The Unitization Act provides for the taking of the contractual rights of the lessors and the relief of the lessees of heavy contractual burdens under the leases and totally and wholly fails to make provision for any compensation whatsoever for the loss of these rights except the compensation provided for the loss of one-eighth royalty. The said contractual rights are private property. The taking of such contractual rights without provision for [fol. 125] compensation clearly violates the provisions of the Constitution of the State of Oklahoma above quoted which prohibits the taking of private property for public use without just compensation (and we assume only for the purpose of argument that the taking of the property is for public us-.)

2. The 14th amendment to the Constitution of the United States, Section 1, quotes as follows:

"All persons born or naturalized in the United States and subject to the jurisdiction thereof, are citizens of the United States and of the state wherein they reside. *No state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States, nor shall any state deprive any person of* life, liberty, or *property, without due process of law, nor deny to*

any person within its jurisdiction the equal protection of the laws.''

(a) The Unitization Act provides that it can be set in operation only by lessees of 50% of the area of the common source of supply and authorizes said majority owners to expunge the contracts of the lessors and lessees depriving the lessors of valuable contractual rights and relieving the lessees from heavy contractual burdens under the leases and authorizing the said majority owners to take the lands and property of the lessees and use the same for oil and gas purposes and to fix the compensation of the lessors for the lessors or the minority lessees the right to place the [fol. 126] act in operation or to fix the compensation of the parties involved for the loss of their royalty or any other contractual rights or property which patently denies to the lessors and to the minority owners, all of whom are citizens of the United States, the equal protection of the laws as provided in the above provisions of the United States Constitution.

[fol. 127] (b) The Unitization Act, by placing in the majority lessees the powers hereinabove set forth and the taking of property of private persons, as hereinabove set forth, is an attempt on the part of the State of Oklahoma to make and enforce a law which abridges the privileges and immunities of citizens of the United States in violation of the provisions of the constitution of the United States hereinabove set forth and underlined. The privileges and immunities abridged, are, namely,

1. The citizens immunity from deprivation of property without due process of law (i. e. the fact that the minority lessees' property, including wells, tanks, powers, pipe lines and installations used in connection with the production of oil and gas and the lessees' contractual rights to the oil and gas produced from their leased property and the lessors' contractual right to oil and gas royalty from their lands are taken by the pretended judicial approval of a court upon which the jurisdiction for such taking has not been conferred and which court does not fix, or determine the compensation of the minority lessees or the lessors from whom the property is taken. The said compensa-

tion is not fixed by any tribunal but by the lesse-s of the majority area themselves with automatic statutory approval by a court of limited jurisdiction upon which jurisdiction for fixing compensation in such case has not been provided.)

2. Citizens immunity from having his private property taken for public use without just compensation (i. e. loss of the express and implied covenants and contractual rights [fol. 128] of the lessors in their oil and gas leases except the royalty clause and relief of the lessees from heavy contractual burdens of the oil and gas leases.)

3. Citisen's privilege to have just compensation for property taken for public use and by "just compensation" is meant compensation fixed by a court of competent jurisdiction (that is, under the Unitization Act, the compensation is not fixed by a court of competent jurisdiction nor even by the Corporation Commission, but is fixed and determined solely by the lesse-s of the majority area.)

4. Citizens are immune from all state laws impairing the obligations of contracts subject to the reasonable and nondiscriminatory exercise by the State of its police power (it is not necessary for the unit operation of a common source of supply of oil and gas if such operation can be compelled under the State Police power to expunge all of the contractual rights both express and implied, of the lessors, e. g. the implied covenant to require the lessee to properly develop and market the oil and gas and to protect the reservoir or part of the reservoir unitized from drainage, the right to terminate the lessee's lease at the end of the primary term if oil or gas is not being produced from the lands, or, in the event to insure proper unit operation of the common source of supply, it is necessary to relieve the lessee of such obligation, which we do not think it is because if the lease is terminated the lessor immediately takes the lessees place in the unitization set-up, then the [fol. 129] lessor should be compensated for the relief of the lesse-s of said contractual burden)

Part Three

Article 1, Section 10 of the United States Constitution quotes as follows:

"*No state shall* enter into any treaty, alliance or confederation; grant letters of marque and reprisal; coin money; emit bills of credit; make anything but gold and silver coin a tender of payment of debts; *pass any* bill of attainder, ex post facto law, or *law impairing the obligation of contracts;* or grant any title of nobility.

(The latter part of the above Section has been omitted.)

The Unitization Act violates the constitution of the United States in that the above quoted Section thereof prohibits any State from passing any law impairing the obligation of contract. An exception has been made to said provision of the constitution of the United States which permits the States in the exercise of the police power to enact laws impairing contracts provided the exercise of such power is reasonable and non-discriminatory. The purpose of the exercise of the police power by the State of Oklahoma under the unitization act is to insure unit operation of common sources of supply of oil and gas in proper cases. In order to accomplish such unit operation it is not necessary to deprive the lessor of his right to the termination of the lease he has given to the lessee for failure to produce oil or gas from the premises, because immediately upon the termination of the lease under its [fol. 430] own terms, the lessor and owner of the minerals may be substituted for the former lessee in the unitization program without affecting in any way the unit operation of the common source of supply. The Unitization Act deprives the lessor of his right to terminate his oil and gas lease for failure of the lessee to produce oil or gas from the premises after the expiration of the primary term. It has always been the very essence of "unless" oil and gas leases that the lessee was obligated to spend large sums of money in the development of the premises for oil and gas in order to extend the lease beyond the primary term and that unless the lessee did drill on the lands and produced oil and gas from the premises within

the primary term of the lease that the said lease would expire and the oil and gas rights revert to the lessor. The oil and gas rights are very valuable otherwise, the lessees would not be engaged in such an extensive and expensive operations and litigation. The lessor has the right to hold the lessee to the terms of the contract as they have been fixed and construed for years by the courts of this State. particularly since the enforcement of such contractual rights and obligations in no way interfer-s with, or impairs the unit operation of, any common source of supply which may be included in part under such oil and gas lease.

The Unitization Act expunges the implied covenants of the oil and gas leases which require the lessee to fully develop and market and to protect the lease against drainage. It is not necessary to the unit operation of a common source of supply to strike out these covenants. The lessee [fol. 131] can still be required to fully develop the common source of supply, to market the oil and gas therefrom, and to protect the same from drainage without affecting in any way, the unit operation of said common source of supply, yet the Unitization Act specifically provides for the expungement of implied covenants of the oil and gas leases. The act further provides that the oil and gas leases, after unitization, should constitute one single oil and gas lease and there is no reason why the said one single lease should not bear all three of the said implied covenants. The act further provides that a part of a common source of supply may be unitized which patently leaves open an avenue for the drainage of oil and gas to the area of the common source of supply not included in the unit. Drainage from the common source of supply may occur through a well bore drilled through the common source of supply to another common source of supply lying either above or below the unitized common source of supply. It is evident from the physical nature of things that the implied covenants requiring full development subject to the conservation law of the State, protection against drainage, and marketing of the oil and gas may be retained in the single lease contract and enforced against lessees without, in any way, interfering with the unit operation of the common source of supply.

There are also numerous special provisions in the various oil and gas leases which provided, among other things, that the lessor shall have the free use of gas in houses and structures located on the premises. This particular provision is very important to the lessor and was a moving [fol. 132] consideration in his execution of the lease. The Unitization Act expunges this provision but such expungement in no way affects the unit operation of the common source of supply. Inasmuch as many of the gas wells will be closed in it might cause the lessee to pipe gas to the lessor's premises, however, this expense would be, as the majority lessees say "de minimus."

If the above matters were taken separately and alone, it is possible that they might not be sufficient by themselves to cause the Unitization Act, as a whole, to violate the constitution of the United States inasmuch as such parts of the act that strike down said contractual provisions could be held unconstitutional and still the balance of the act would be sufficient for unit operation of a common source of supply, but the above items do not stand alone. Taking them all together, the act cannot stand the constitutional test.

There also remains the fact that these contractual rights above named, together with the lessor's rights to their royalty production and the minority lessees property consisting of wells, engines, plants, tanks, pipe lines and oil and gas rights of tremendous value are being taken without *just* compensation. This means compensation fixed by a court. Such property is also being taken discriminately because those persons taking the property are allowed to fix the compensation of those from whom the property is taken rather than such compensation being fixed by a dis- [fol. 133] interested group, tribunal or court of justice. It is apparent that the Unitization Act under the guise of conservation of oil and gas and prevention of waste and economic waste is robbing the lessors of valuable contractual rights which do not affect unit operation one way or the other without any compensation whatsoever and is permitting one group of citizens or perhaps even aliens to take the property of United States citizens, fixing the compensation there for as they please without restraint of

any kind and in such a complicated way that the change of factors of the computation which are disputed by recognized and reasonable engineers and engineering principles would result in the change of compensation to particular tracts of hundreds of thousands and even millions of dollars.

As we have herein before stated, the Unitization Act expunges the lessor's contract by:

(1) Action of the lessee which action is denied to the lessor.

(2) It provides that the compensation of the lessor and the minority of lessees be fixed by the majority lessees or not at all.

We submit that this is indeed unreasonable.

As we have herein before stated, the Unitization Act discriminates against the lessors and the minority lessees in that:

(1) The lessee only is authorized to take such action and the lessor and minority lessees are specifically denied the right to take such action.

(2) Again, the compensation of the lessors and minority lessees is fixed by the majority lessees or not at all.

[fol. 134] It is evident that the Act discriminates against the lessor and the lessee and therefore is an improper use of the police power and seeks to use the police power to accomplish an unconstitutional act and purpose.

We submit that the Act does not come within the exception permitting violation of Article 1, Section 10 of the Constitution of the United States prohibiting State laws impairing the obligations of contract for the reason that the act in unreasonable and discriminatory. That said decision overlooked the following distinctions decisive of the case and duly submitted by counsel:

(1) The decision states that the constitutional questions presented are, whether the act constitutes "reasonable exercise" of the police power, but omits the further qualification to-wit: "without discrimination."

(2) The decision further states that one of the grounds relied upon is that the act as a whole is "unreasonable"

but omits the further qualification to-wit: "discriminatory."

(3) The decision states that a ground relied upon is that the act constitutes an unauthorized delegation of "legislative power" but omits and fails to consider the unauthorized delegation of "judicial power."

(4) The decision states that another ground relied upon is that both in the formation of the unit and in the community management thereof, that the lessees only are recognized to the exclusion of the lessor. The decision omitted to consider also that the majority lessees only were recognized and the minority lessees and the lessors [fol. 135] excluded as to the division of oil and gas, assessment of damage, and compensation for loss of property and contractual rights, all of which should be considered in the decision.

(5) The decision states that a ground relied upon is that the act imposes an unauthorized burden upon the leased premises of the lessor but omits to add "without just compensation" and "with discrimination" against the lessor and without reasonableness or necessity for the unit operation of the common source of supply.

(6) The decision, in discussing the ground that the act is unreasonable, mentions only the contentions that (a) the act is unreasonable because it does not require, as a condition to the establishment of the unit, a finding by the Commission that for the purposes of conservation the application of the act will be more effective than that of existing laws and (b) that compulsory unitization can only be justified where the advantages to be gained far offset the loss to be sustained to property and individual rights.

The decision concludes upon the consideration of the above contentions that the same challenge the authority of the legislature in dealing with matters of policy which is a realm that is without the scope of judicial inquiry. By the consideration only of the above numbered contentions and the conclusion thereon, the decision begs the constitutional questions contended for. The decision entirely overlooks the contention that the unreasonable and discriminatory portions of the act, *are is*, the authority of the majority lessees, to put the act into effect and the authority granted

them to take the property of the minority lessees and the [fol. 136] lessors and fix their compensation without an adjudication of their damages or the amount thereof. The decision further begs the question in that it does not consider the contention that the discrimination against citizens created by the act and the impairment of contracts created by the act are all unnecessary for the effective unit operation of common sources of supply of oil and gas. The decision begs the contention that the act permits lessees of the majority area to adjudge the lessors' rights and compensation, when the purpose of the act could be accomplished without such unreasonable and discriminating powers in said majority lessees.

The decision, in discussing the ground that the act constitutes an unauthorized delegation of legislative power overlooks the contention that the same also constitutes an unauthorized delegation of judicial power and discriminates against the minority lessees and the lessors and does not give either one of them the equal protection of the law and that all the said discriminatory provisions, as well as the unauthorized delegation of judicial power are unnecessary for the effective unit operation of the common source of supply and are therefore unreasonable. In discussing said ground, the decision confines itself to the provision of the act which gives the authority thereunder to lesse-s of record of 50% or more of the area of the common source of supply and to the veto of the operation of the act by 15% thereof, and overlooks that portion of the act which authorizes the same 50% to take the property of the minority and the lessors, striking down their con- [fol. 137] tractual rights and arbitrarily fixing their compensation. When only that portion of the act is considered in which the 50% are authorized to make the application the discrimination and unreasonableness is not nearly so potent as when the rest of the act is considered, which authroizes the said 50% to take the property and also fix the compensation. The decision states, as a conslusion that the above contentions do not amount to a delegation of legislative power to beg the question that the same is a discrimination denying equal protection of the laws and is

unnecessary for accomplishing unit operation of a pool and is therefore unreasonable. The decision further begs the question when it concludes that the provision of the act which requires the lessees of 50% of the area to petition the Commission to place the act in effect, is not a violation of due process because the decision omits to include in the consideration the fact that the same 50% take the property of the minority lessees and the lessors and that they alone fix the compensation there for. If the decision had considered those matters the logical conclusion would have been that the act amounted to a delegation of judicial power and there for a violation of due process by reason thereof and which would have brought the facts within the scope of Carter vs. Carter Coal Company, 298 U. S. 238 L. ed. 1160 and other cases relied upon. The decision states that the situation set forth in the Carter cases does not obtain herein, but the decision overlooked and failed to consider that said 50% by reason of their application take over all the property and fix the compensation therefor including *there* own compensation.

[fol. 138] The decision, in stating that the power of establishment of the unit rests with the Corporation Commission, overlooks the provision of the act which gives the Corporation Commission no choice in making the order but sets up a number of conservation principles which the Corporation Commission is constitutionally committed to follow as being the criterion for the making of the order; but be that as it may, it does not remove or modify the fact that the property is taken by the 50% and the compensation fixing by they themselves.

The decision again concludes that if the establishment of the unit were dependent upon the will of the lessee, an exercise thereof would not be the exercise of legislative authority and begs the question as to whether or not when coupled with the power to take the property and fix the compensation, therefore, it would be an exercise of judicial power and an unnecessary discrimination against the lessors and minority lessees. The decision, in support of said conclusions, cites and quotes from Currin vs. Wallace, 306, U. S. 1, 83 L. ed. 441, which also quotes a case concerning a referendum to tobacco growers. The decision

overlooked the fact that no contractual rights are impaired by the tobacco growers and no property is taken from them. The decision quotes from said case saying that it is not a case where a group of producers may make the law and force it upon a minority or where a prohibition of an inoffensive and legitimate use of property is *is* impossible, not by the legislature, but by other property owners. The decision overlooks the fact that the objections quoted are [fol. 139] exactly what is happening to the lessors and the minority lessees in this matter. The decision further quotes that the Supreme Court of the United States as to the so-called flexible tariff provision of the act of September 21, 1922 and the authority it conferred upon the President, which act was approved by the Supreme Court of the United States. The decision overlooks the fact that the act of the President was not that of one contracting party against another or even one citizen against another and certainly there was no discrimination against any citizen of the United States. No property of a citizen, by the action of any other citizen, was taken nor was any contract expunged or impaired. In this respect, the decision begs the question submitted by the Plaintiffs in Error.

The decision overlooked the discrimination and unreasonableness of the act in permitting the lessees of 50% of the area of the common source of supply to invoke the jurisdiction of the Corporation Commission, take the property of the minority lessees and lessors and fix their compensation, in citing the drainage and conservantcy statutes of Oklahoma and their constitutionality as authority for sustaining the Unitization Act. The decision overlooked the fact that the majority land owners in Oklahoma drainage districts do not assess the damages and benefits of the land owners affected. This is done by disinterested persons subject to the approval of the Board of County Commissioners and review on the merits denovo by the district court, a court of general jurisdiction.

[fol. 140] The decision states that the question involved is not the wisdom of granting the right of protest to the lessee while withholding it from the royalty owners but whether it was in the power of the legislature to do so with which we do not agree. The decision then further states

that it was within the power of the legislature to do so because being within its police power to enact the law without the consent of either lessees or royalty owners it was optional with it to require the consent of either. The decision in so stating overlooked the proviso attendant to such a statement to-wit: "Provided it did not result in a discrimination against either and that the consequences following the same were not unreasonable."

The decision states that where privilege is granted to some in such situation, the Constitution is satisfied if all similar*ly* situations are treated alike and cites in support thereof Field vs. Barber Asphalf Paving Company, 194 U. S. 618, 48 L. ed. 1142, in which the Supreme Court of the United States said that the point of objections in that case was that the privilege of protest was not given to non-resident owners in the case of an improvement assessment thereby discriminating against them and further stated that it is well settled that in every discrimination of such a character violates the constitutional rights and that the Federal Constitution is satisfied if all persons similarly situated are treated alike in privileges conferred or liabilities imposed. The decision overlooked the fact that in the Field vs. Barber case that no property was taken from the non-resident owners and none of their contrac-[fol. 141] tual rights were impaired. The lessors and lessees being contracting parties are similarly situated in that respect and they are certainly not treated alike. The lessees of the majority area and the lessees of the minority area are also similarly situated in that they are lessees but they are certainly not treated alike because the majority lessees do take the property of the minority lessees and of the lessors and fix the compensation there for and the method and manner of payment thereof. The decision further overlooks the fact that the resident property owners in the Field vs. Barber case were not taking the property and lots and houses and buildings of the non-resident lot owners, much less fixing the compensation there for.

The decision states that the purpose of the Unitization Act is to permit the use of the value of the reservoir to the fullest degree possible and that this can be done only through an intelligent control of the drilling operations.

The decision overlooked the fact that there must also be intelligent use of gas, recycling, water flood, pressure maintenance and other operations which are the contractual obligations of the lessees. The decision states that the royalty owners have committed to the lessees their right to produce in exchange for a definite share of production in reliance upon the ability of the lessees to produce. The decision overlooks the fact that the leases contain no such provision but distinctly provide that said leases shall remain in force only for the primary term and as long thereafter as oil or gas or either of them, is produced from the premises and further overlooked the provision of the lease that the lessee will pay to the lessor a certain percent-
[fol. 142] age stipulated in said lease of the oil and gas produced from the premises free and clear of all cost to the lessor and other provisions which place heavy burdens on the lessees. In the event the lessee fails to comply with the terms and provisions of said lease, the same expires, automatically. If he fails to comply with the implied covenants of said lease, the same is subject to cancellation.

The decision further states that the royalty interest is recognized and fixed by law and in this respect the decision overlooks the fact that the royalty by the lessor and lessee can arise only by contract and is fixed only by contract. The decision further overlooked the fact that all of the lease contracts involved herein provided that they shall terminate unless oil or gas is produced from the premises by the lessee.

The decision concludes that the real problem involves an appraisal and adaptation of the existing problems that rest upon the shoulders of the lessees. The decision overlooks the fact that unit operation of common sources of supply in proper cases is the solution of the lessees problem and that the same can be solved without discrimination against the minority lessees or the lessors and *and* that it is not necessary and is unreasonable for the majority lessees to take over the property and then themselves alone compensate the minority lessees and the lessors as well as themselves for taking of the property.

[fol. 143] The decision further states that by reason of

their responsibility the lessee have an interest that is distinctive from that of the royalty owners but is not adverse thereto because the interest of the latter are dependent upon and must rise or fall with that of the lessees. The decision overlooked the fact that the right of the lessees is entirely dependent upon their fulfilling the obligation of their contracts to the lessors and that the interest of the lessors is not at all dependent upon the interest of the lessees because if the lessee fails in his obligation to the lessor and fails to produce oil or gas from the premises, his lease terminates and the lessor again is the owner of the oil and gas rights to the premises and the lessee has no interest therein whatsoever. The decision further overlooked the fact that the interest of the lessees and lessors are so adverse that the courts have been required, in order to protect the lessors against the encroachment of the lessees, to decree implied covenants in the oil and gas leases which require the lessees to fully develop and protect the leases against drainage and to market the oil and gas therefrom at the peril of cancellation of their lease and the loss of their oil and gas rights.

The decision states that the lessees, by reason of their knowledge of the problems, are in a better position than the royalty owners to appraise the wisdom of unification. The decision overlooked the fact that the Corporation Commission is constitutionally authorized to pass on the wisdom of the conservation of oil and gas and prevention of waste thereof and economic waste of which the unitiza-
[fol. 144] tion is merely a phase. The decision further overlooked the fact that the wisdom or folly of unitization is begging the question as to the taking of property and expunging of contractual rights without just compensation and in a discriminatory manner, particularly when such taking and compensation could be accomplished without discrimination.

The decision states that the royalty owners have, by their own acts, completely divorced themselves from the production of the oil and gas and implies that that should preclude them from objecting to the constitutionality of the act. The decision overlooked the fact that the royalty

owners are still interested to the extent of their contractual rights and the heavy obligations imposed upon the lessees by the terms of the leases and that the books are filled with cases in which the lessors have brough- actions against the lessees to compel the lessees' performance of their contractual obligations. The decision further overlooked the fact that just because the royalty owners have leased their oil and gas rights under definite written lease contracts, that they should not, for that reason, have their contracts expunged without compensation and have the royalty reserved to them in the contracts appropriated by the lessees and the compensation therefor fixed by the majority lessees amounting to a clear discrimination, a denial of the equal protection of the laws, a taking of property without just compensation and unreasonable arbitrary and capricious manner of making the unit operation of common sources of supply effective.

[fol. 145] The decision states that the reason why the legislature should extend the privilege of responsibility to the lessees and not to the lessors is so manifest that it concludes any idea that the legislative act was capricious. The decision overlooks the fact that the lessors do not seek the operation or management of the property and it has further been overlooked that the unitization of the common source of supply could have been accomplished without discriminating against the lessor in that it could have authorized a dis-interested tribunal to fix his compensation for his royalty and could have authorized a dis-interested tribunal to determine his loss of contractual rights and relief of the lessees of heavy burdens under the lease and fixed his compensation therefor rather than permitting the majority lessees to fix his compensation for his royalty and absolutely ignore compensation for his loss of other contractual rights and the relieving of the lessee of heavy burdens under the lease.

Wherefore, The Plaintiss in Error pray that a Re-Hearing of said cause may be granted by your Honorable Court.

Hatcher & Bond, By Reford Bond, Jr., Attorneys for the Plaintiff in Error referred to herein.

[fol. 146] IN SUPREME COURT OF OKLAHOMA

[Title omitted]

AFFIDAVIT OF SERVICE

STATE OF OKLAHOMA,
County of Grady, ss.

REFORD BOND, JR., of lawful age deposes and says that he is the Attorney for the Plaintiffs in Erro- herein named and that he served a copy of the within and foregoing Petition for Re-Hearing on the Defendants in Error by mailing a copy thereof to R. N. Williams, Phillips Petroleum Company, Bartlesville, Oklahoma, Attorney for the Defendants in Error on 30th day of April 1951.

Reford Bond, Jr., Attorney for the Plaintiffs in Error.

Subscribed and sworn to before this 30th day of April, 1951. My Commission expires: January 30, 1955. Leona Bond, Notary Public. (Seal.)

[fol. 147] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

[Title omitted]

PETITION OF B. E. JOHNSON ET AL. FOR REHEARING—Filed May 3, 1951

Comes now B. E. Johnson, M. L. McIntyre and Virginia McIntyre and petition the court in this cause to grant them a rehearing from the decree and judgment rendered by this Court on March 20, 1951, affirming in case No. 33336 the order of the State Corporation Commission made in cause No. 20289.

We desire to briefly refer to and comment upon certain material facts and contentions appearing in the record and presented in the brief and oral argument which the majority of the Court, as reflected by its opinion, overlooked or to which it gave improper consideration. The more im-

portant of these facts and contentions, insofar as they relate to the constitutional questions involved, are as follows:

1. The majority of the Court apparently failed to consider the pertinent facts reflecting the destruction of the rights of B. E. Johnson, M. L. McIntyre and Virginia McIntyre by this compulsory unitization.

2. It appears that the majority of the Court misconceived the nature of the constitutional issues presented and [fol. 148] argued by plaintiffs in error in their brief.

3. It appears that the majority of the Court limited its consideration to the abstract provisions of the Unitization Act and did not consider the manner of its application to the facts and circumstances of this case.

4. In order to eliminate any doubt in these respects, plaintiffs in error contend:

(a) That House Bill 339 of the 1945 Legislature, known as the "Unitization Act" and the order of the Corporation Commission of Oklahoma approving the written plan of compulsory unitization of the several Medrano sand bodies in the West Cement field, Caddo County, Oklahoma, as interpreted and applied to the operations of the plaintiffs in error, under the undisputed evidence in the record, is an improper and unreasonable exercise of the police power and as such constitutes an unlawful delegation of legislative power to private persons or groups in violation of Section 1, Article 4, Section 1, Article 5 of the Oklahoma Constitution, and deprives plaintiffs in error of their property without due process of law, and denies plaintiffs in error equal protection of the law in violation of Section 7, Article 2, of the Oklahoma Constitution and the 14th Amendment of the Constitution of the United States; and impairs the obligations of preexisting contracts and takes the private property of plaintiffs in error without their consent, without compensation and for private use in violation of Sections 15 and 23, Article 2, of the Oklahoma Constitution and Article 1, Section 10, of the Constitution of the United States.

[fols. 149-150] 5. These plaintiffs in error adopt as fully as if re-alleged herein the entire petition for rehearing

filed herein by the Palmer Oil Corporation and make it a part hereof.

CONCLUSION

It is respectfully submitted that this petition for rehearing should be granted.

Jack W. Page, Attorney for Plaintiffs in Error, 906 Cravens Building, Oklahoma City, Oklahoma.

CERTIFICATE OF SERVICE

Jack W. Page, attorney for plaintiffs in error herein named, hereby certifies and states that he did on the 3rd day of May, 1951, serve a copy of the within petition for rehearing on the following named persons, to-wit:

The Corporation Commission of the State of Oklahoma by delivering a copy to Floyd Green, the attorney for said Corporation Commission; the Attorney General of the State of Oklahoma by mailing a copy thereof to said Attorney General; R. M. Williams, attorney for Phillips Petroleum Company, by mailing a copy thereof to him; R. G. Lowe, attorney for Gulf Oil Corporation, by mailing a copy thereof to him; Rainey, Flynn, Green and Anderson, attorneys, by mailing a copy thereof to them; the attorney for Magnolia Petroleum Company, by mailing a copy thereof to him in Oklahoma City, Oklahoma; Booth Kellogh, attorney for Amerada Petroleum Company, by mailing a copy thereof to him, and W. H. Brown, attorney for Anderson-Prichard Oil Corporation, by mailing a copy thereof to him.

Jack W. Page, Attorney for the within named, Plaintiffs in Error.

[fol. 151] IN SUPREME COURT OF OKLAHOMA

[Title omitted]

[File endorsement omitted]

PETITION OF PALMER OIL CORP. ET AL FOR REHEARING—Filed May 3, 1951

Comes now The Palmer Oil Corporation and Paul Sterba and Paul Sterba, Jr., a minor, by and through his father

and next friend, Paul Sterba, and petition the Court in this consolidated cause to grant them a rehearing from the decree in judgment rendered by this court on March 20, 1951, affirming in Case No. 33336 the order of the State Corporation Commission made in Cause No. 20289, and denying in Case No. 33708 petitioners' original petition for a writ of prohibition.

[fol. 152] We desire to briefly refer to and comment upon certain material facts and contentions appearing in the record and presented in brief and oral argument, which the majority of the Court, as reflected by its opinion, overlooked, or to which it gave improper consideration. The more important of these facts and contentions, insofar as they relate to the constitutional questions involved, are as follows.

1

The majority of the Court apparently failed to consider the pertinent facts, reflecting the destruction of the rights of The Palmer Oil Corporation, Paul Sterba and Paul Sterba, Jr., by this compulsory unitization.

The first producing oil and gas well in the West Cement Field in Caddo County, Oklahoma, was completed on October 17, 1917. On February 18, 1936, Paul Sterba, and others, being the then owners of the Southwest Quarter of Section 35, Township 6 North, Range 10 West, Caddo County, Oklahoma, executed an oil and gas lease to Gulf Oil Corporation. Gulf Oil Corporation thereafter in September, 1938, sold and assigned its rights under the oil and gas lease, to a depth of 6,000 feet, to The Palmer Oil Corporation, Gulf also retaining an overriding royalty. Neither said lease nor any instrument relating thereto provided for unitization or pooling of the premises with any other leases. Palmer immediately drilled several oil and gas wells on the premises, producing from zones above the Medrano Sand.

The first production of gas from the Medrano Sand Bodies of the West Cement Field occurred in October, 1936, from the Southwest Quarter of Section 36, Township 6 North, Range 10 West, and production of oil from Medrano [fol. 153] Sand Bodies was first discovered in March, 1943,

in the Southeast Quarter of Section 35, Township 6 North, Range 10 West.

The rights of Palmer and Sterba were vested and fixed long before the Unitization Act was passed in the year 1945; and Palmer had, in fact, by October 22, 1946, drilled six oil and gas test wells on the Sterba lease, two producing from the Medrano Sand Bodies when the Unitization Act, and its ill-begotten child, the written Plan of Unitization, sired by Phillips Petroleum Company, and other major operators, was presented for christening to the Oklahoma Corporation Commission, which, having no power but to let live, gave its blessing and christened the baby "The West Cement Medrano Unit" on September 5, 1947. During the pendency of the proceedings before the Oklahoma Corporation Commission concerning the written Plan of Unitization, Palmer drilled and completed a third oil well producing from the Medrano Sand Bodies and this third well is referred to in the opinion of the majority Court.

The written Plan of Unitization covered the several separate uncommunicable Medrano Sand Bodies under an area containing approximately 3700 contiguous surface acres, extending from the southeast to the northwest, in excess of five miles, with greatest width from north to south of approximately three and one-half miles. The Sterba-Palmer lease is near the center and in the most productive portion of the unit area.

Although Palmer's surface ownership was only approximately 4% of the unit surface area (not being a sufficient percent to protect itself under any of the provisions of either the Unitization Act or the Plan of Unitization), yet the division of interest formula used in connection with the [fol. 154] written Plan of Unitization shows that Palmer owned a very valued property right in excess of 5,000,000 barrels of oil in place under its lease, and was under the Plan originally allowed 5.145% of the production from the unit area, which, after the drilling and completion of the third well above mentioned, was increased to 5.51614% interest, the increase representing in excess of 175,000 barrels of oil in place.

It is Palmer's developed and valuable rights in the Sterba lease and the oil and gas thereunder and the business of

producing and selling the same that were completely taken away from it by the Plan of its competitors approved by Commission's Order of September 5, 1947, and placed in the hands of private parties, again Palmer's competitors, which have been operating the same since December 7, 1947.

Although the interests of Paul Sterba and Paul Sterba, Jr., are 1/8th of the approximate five million barrels of oil in place under their leased land allocated under the Plan of Unitization to Palmer, and 1/8th of the approximately two and one-half million barrels of oil under their leased land allocated by the Plan of Unitization to Gulf Oil Corporation, and, although their lease contract, made almost ten years before the passage of the Unitization Act, did not in any manner provide for the unitization of the lease on the Sterba land with other leases, the Sterba rights—very valuable, as indicated—are from them taken under the Plan of Unitization by private parties without the Sterba- having any vote in any percentage whatsoever, or the right to protect or enforce their lease contract.

[fol. 155] The majority opinion states:

> "Involved on the appeal are two major questions. One, the constitutionality of said sections of the statute which, as a whole, constitute what is known as the Unitization Act (H. B. 339 of the 1945 Oklahoma Legislature). The other, the legality of the order of the Commission if authorized under the Act to effect unitization. These questions will be considered in the order stated. . . .
>
> "On behalf of the lessees it is contended that the Act is violative of Art. 11, Sections 7, 15, 23 and 24 of the Constitution of the State of Oklahoma, and of Art. 1, sec. 10 and the Fourteenth Amendment to the Constitution of the United States. For the purpose of the presentation, there is no segregation of the contentions as to each of said constitutional provisions for the expressed reason the grounds relied on have common application to all. Two grounds are relied on. One, the Act as a whole is unreasonable. The other, the Act constitutes an unauthorized delegation of legislative power."

From the above quoted portions of the majority opinion, it appears that the majority of the Court:

(a) misconceived the nature of the constitutional issues presented and argued by plaintiffs in error, and

(b) limited its consideration to the abstract provisions of the Unitization Act and did not consider the manner of its application to the facts and circumstances of this case.

In order to eliminate any doubt in these respects, plaintiffs in error contend:

That House Bill No. 339 of the 1945 Legislature (Title 52 O. S. Supp. 1947, Secs. 286.1 to 286.17, both inclusive), known as the Unitization Act, and the Order of the Corporation Commission of Oklahoma approving the written Plan of compulsory unitization of the several Medrano Sand Bodies in the West Cement Field, Caddo County, Oklahoma, as interpreted and applied to the operations of [fol. 156] Palmer and other plaintiffs in error, under the undisputed and indisputable evidence in the record, is an improper and unreasonable exercise of the police power and, as such, and at the same time (1) constitutes an unlawful delegation of legislative power to private persons or groups in violation of Section 1, Article 4, and Section 1, Article 5, of the Oklahoma Constitution (2) deprives plaintiffs in error of their property without due process of law, and denies plaintiffs in error the equal protection of the law in violation of Section 7, Article 2 of the Oklahoma Constitution and the Fourteenth Amendment of the Constitution of the United States; (3) impairs the obligations of preexisting contracts and takes the private property of plaintiffs in error without their consent, without compensation and for private use in violation of Sections 15 and 23, Article 2 of the Oklahoma Constitution and Article 1, Section 10 of the Constitution of the United States.

The overall constitutional question involves not only a consideration of the abstract provisions of the Unitization Act, but the manner of its application, which includes each and all of the following considerations, none of which can be separately treated or as unrelated to the whole:

(a) The abstract provisions of the Unitization Act.

(b) The Written Plan of Unitization formulated by Phillips Petroleum Company, and private parties, and which, when approved by the Commission also became law.

(c) The Finding of Fact and Order of the Commission.

(d) All of the facts and circumstances of the case.

[fol. 157] The majority of the Court further states:

> "The substance of lessees' ground one is that the Act is unreasonable because it does not require as a condition to the establishment of the unit a finding by the Commission, that for the purpose of conservation, the application of the Act will be more effective than that of the existing laws.
>
> "There is not contention that the standards prescribed are insufficient in any respect other than in not including the suggested findings. Therefore, it necessarily follows that the contention challenges the authority of the Legislature in dealing with matters of policy, which is a realm without the scope of judicial inquiry."

[fol. 157]

III

The majority of the Court further states:

tion of its opinion, evidently concluded that the constitutional issues were limited to one ground, i. e. that the Corporation Commission could, under the provisions of the Unitization Act, apply the same and the Written Plan of Unitization, without a finding that such Unitization and Plan would accomplish greater conservation than that permitted under existing law. It is reiterated that the issues presented and argued were not limited to any one ground but were based on many grounds.

The majority of the Court, as shown by the quoted portion of its opinion, stated that plaintiffs in error did not question the validity of the so-called "standards" set forth in Section 286.4 of the Unitization Act. Such statement, we respectfully present, is in error. Plaintiffs in error have at all times argued that the so-called standards were not standards at all and that the Unitization Act, as

applied in this case, was an unreasonable exercise of the police power, because:

[fol. 158] (a) It had a retrospective operation and seriously disrupted existing and vested rights. (Our brief 317 and 318).

(b) It would serve no purpose in respect to the Medrano Sand Bodies since more than ⅔rds of the gas energy had already been exhausted. (Our brief 317-318).

(c) It could not be any more effective for conservation purposes than the general conservation laws. (Our brief 318-321).

(d) The so-called "standards" set forth in Section 286.4 are too broad, vague and unspecific to constitute any guide to the Commission. (Our brief 318-321).

(e) It did not become effective unless proceedings were initiated by at least 50% of lessees of surface area who not only had the exclusive power to initiate the proceedings, but also formulated and presented the Written Plan of Unitization, which Plan included, as an inseparable part thereof, a determination of interest that The Palmer Oil Corporation, Paul Sterba and Paul Sterba, Jr., were allowed therein. (Our brief 320).

(f) The Unitization Act and the Written Plan approved could be nullified within sixty days by 15% of the lessees of the surface area. (Our brief, 320).

(g) The Unitization Act and the Written Plan of Unitization in this case was designed in the interest of the major operators who could always control the formulation, application and operation of the law. (Our brief, 320-321).

(h) The Unitization Act provides not for mere rules and regulations, but grants the right to private parties, at the will of certain percentages thereof, as pointed out herein, to take over the management and control of non-consenting [fol. 159] minority interests in large oil fields, and further grants the right to such private parties, who thus take from and annihilate the rights of the non-consenting minority interests, to fix the interests (compensation) which such minorities are allowed under the Plan of Unitization, both without judicial consideration or the intervention of a public agency having a real discretion in the matter. It is

the private parties' Plan of Unitization which fixes the interests (compensation) of the non-consenting minority interest holders; it is not the Oklahoma Corporation Commission that fixes such interests (compensation). For private parties to thus be granted such rights and authority, not only to take property away from non-consenting minority interests, but also in such a manner to have the exclusive right to fix the interests (compensation) for the property so taken, clearly is an unreasonable exercise of police power, and has no relation whatsoever to the pronounced purpose for the Unitization Act, i. e., conservation. (Our brief 326, 330.)

In fact, the constitutional issues are not limited to the above contentions.

For instance, Mr. Justice Welch, in his well reasoned and able dissenting opinion, sets forth and discusses many constitutional objections which are apparent from the record, and by reference we wish to incorporate herein the contents of his opinion and the dissenting opinions of Mr. Justice Davison and Mr. Justice O'Neal.

[fol. 160] IV

In order that there may be no further misunderstanding in respect to the constitutional issues raised, plaintiffs in error desire to amplify some of the more important constitutional issues which are apparent from the record, and were presented by brief and oral argument.

(A) The majority of the Court stated in its opinion:

> "No rights have been exercised under the 15% provision of Section 286.6 though its validity is questioned here. It is unnecessary to determine the constitutionality of this provision at this time. The same is true of the 10% provision of Section 286.1[1] providing for the reconsideration by the Commission of the Plan and operation and fixed correlative rights thereunder. These undertermined questions are reserved."

To say that it is unnecessary to determine the constitutionality of this provision at this time with reference to the

fifteen percent provision of Section 286.6 constitutes an evasion of the construction of the statute, because it is the Unitization Act as a whole, as applied in this instance in conjunction with the Plan of Unitization conceived by private parties, that destroys and violates the constitutional rights of plaintiffs in error. While the pronounced purpose of the Act (Sec. 286.1) may be laudable, the subsequent portions of the Act and of the Plan of Unitization—its ill-begotten child—are disastrously destructive of the constitutional rights of plaintiffs in error. Such a statute and such a Plan, when so considered, are not unlike an egg. It cannot be part good and part bad. In this instance, it is all bad.

It was never contended by any party to these proceedings that Section 286.6 or Section 286.11, or any other section, could be separated from the Unitization Act as a whole, despite the provision of Section 286.16. All parties [fol. 161] understood the Unitization Act as being a special and exceptionally drastic type of legislation, which would have a separate and different application, depending upon the form of Written Plan of Unitization, to each different oil field in the State of Oklahoma, if applied. Since this exceptionally drastic type of legislation, where applied, would necessarily have a continuous and day to day application, it should not be considered piecemeal, but as a whole.

The question of separability having appeared in this case for the first time in the opinion of the majority of the Court, petitioners in error urge that it is only right and proper that they should have a full opportunity to present and argue the question of separability.

The majority of the Court, having disregarded Section 286.6 (15% provision) and Section 286.11 (10% provision), assuming erroneously said provisions are not in issue and separable, it must be assumed that the majority of the Court would likewise disregard Section 286.12 (15% provision on enlarging unit) on the same ground. Not anticipating such lack of the construction of the express provisions of the statute, plaintiffs in error seriously urge a rehearing so that the majority of the Court can carefully consider similar issues involving control by private parties

on a percentage basis under the express terms and provisions of the written Plan of Unitization, as follows:

(1) The Order of the Commission and the written Plan of Unitization could have been nullified merely by the failure of the Unit Committee by a vote of 66⅔ percent to take over operations under the unit within three months from the date of the Order. (See Section 9 of the written [fol. 162] Plan). In fact the Unit Committee, in taking over the unit operations on December 7, 1947, barely escaped this nullification by two days. Will the majority of the Court say that this provision of the Plan is not in issue and separable?

(2) The day to day operations under the unit are not supervised or controlled by the Corporation Commission, but are handled by the Unit Operator, subject to vote of 66⅔ percent of the Unit Committee, except on the question of removing the Unit Operator, in which event a 75 percent vote is required. Here again, a percentage in interest controls. Is this express provision of the Plan to be held not in issue and separable?

(3) Sections VIII, XIV and XV of the Plan of Unitization permit the Unit Operator, subject to 66⅔ percent vote of the Unit Committee, to produce all of the oil from the unit from any one lease and to abandon such depleted lease. Is this provision not in issue and separable?

(4) The Unit Operator may produce oil disproportionately from the Palmer-Sterba lease for the benefit of the other leasehold owners within the area and then, subject to vote of 66⅔ percent of the Unit Committee, abandon from the unit such other leases as have not been depleted by production, the owners of such abandoned leases gaining participation in the production from the Palmer-Sterba wells and the return of their own undepleted leases. Actually, the Unit Operator has produced oil disproportionately from the Palmer-Sterba lease, producing up to 11 percent of the total unit production (see Application for Writ of Prohibition) from this one lease, whereas Palmer's unit [fol. 163] assigned interest in the total unit production is approximately 5.5 percent. Is this control by percentage not in issue and separable?

(5) Under Sections XV and VIII of the Plan of Unitiza-

tion the Unit Operator, upon vote of 66⅔ percent of the Unit Committee, may incur any expense it pleases in the further development or operation of the unit, may drill, plug or abandon any well or wells it desires, may abandon or change any or all method or methods of operation in whole or in part at any time, may completely abandon the unit, dissolve and wind up its affairs at any time. Are these express provisions of the Plan of Unitization not in issue and separable?

Although the majority of the Court has disregarded the arbitrary percentage provisions of the Unitization Act referred to above, certainly the majority of the Court, upon further consideration, cannot disregard the arbitrary and unreasonable percentage provisions as set forth in the Written Plan of Unitization. Even without considering other contentions, the Written Plan of Unitization is an unreasonable exercise of the police power, by reason of the fact that a certain percentage of the Unit Committee, as private individuals, have the power to exercise arbitrary and unreasonable power without limitation. In other words, the compulsory unitization is not a unit born of or controlled by the provisions of the law, but rather a unitization depending upon the will of private individuals who control percents, as stated, of the vote of the Unit Committee. [fol. 164] (B) The Unitization Act applies only upon a petition being filed by 50 percent (meaning 50 percent of the surface area) of the lessees who also formulate and present with the petition, the written Plan of Unitization. The Corporation Commission cannot breathe the breath of life into the Unitization Act, or any Plan of Unitization thereunder; this can only be done by 50 percent of the lessees in the area of the assumed common source of supply. In other words, certain percentages of private parties not only initiate the proceedings, but actually formulate the Plan which determines the interests and controls that particular oil and gas field. This Plan of Unitization takes over all rights of The Palmer Oil Corporation, and the Sterbas, who in return are allowed to receive certain interests in the unit production. The interests, however, allowed to Palmer and Sterba are not fixed or determined

by the Commission, but by the 50% in interest who formulated the Plan.

This is not only an unreasonable discrimination, it is an unauthorized delegation of authority (both legislative and judicial) to private individuals. The majority of the Court, in its opinion, makes no reference to the delegation of judicial power, but with reference to delegation of legislative power, states:

> "In the first place the power so granted can neither establish nor disestablish the unitization when established because the power of establishment rests with the Corporation Commission. In such situation there is not a trace of legislative power exercised."

We submit that the quoted portion of the opinion is an incorrect interpretation of the statute. The Corporation [fol. 165] Commission has no power to initiate the proceedings, nor to formulate the Plan of Unitization. If the Corporation Commission rejects the Plan, nothing is accomplished. The Corporation Commission has no power to alter or amend the Plan in any respect; the only authority vested in the Commission is to accept and approve the Plan and the determination of interests as therein fixed in the exact form and substance as petitioned for and submitted by 50% of leases in the area. This is far different and distinguishable from a situation where certain legislation becomes effective only upon certain conditions.

Since this case was argued before the Supreme Court, an annotation on the delegation of authority to private individuals has been published in 3 ALR (2d) 188. This annotation clearly shows that where a percentage of private individuals not only initiate but formulate the legislation, the same is invalid and constitutes the most vicious type of unauthorized delegation of power to private individuals.

(C) The basic fact or major premise permitting conservation legislation which involves the adjustment and protection of correlative rights, is the existence of a single common source of supply. Therefore, if the Unitization Act did not have the provision (Sec. 286.2) limiting its operation to a common source of supply, the Act, without more, would be definitely violative of the Constitution of

the State of Oklahoma, as well as the Constitution of the United States. See H. F. Wilcox Oil & Gas Co. v. State, 162 Okla. 89, 19 P. (2d) 347; Mars v. Oxford, 32 F. 2d 134, cert. denied 280 U. S. 563, 50 S. Ct. 24, 70 L. ed. 617, and Ohio v. [fol. 166] Indiana, 177 U. S. 190, 20 S. Ct. 576, 44 L. ed. 729.

There is no provision in the Unitization Act expressly granting the right to the Corporation Commission to determine such basic fact or major premise, namely, the existence of a single common source of supply. Nevertheless, that issue was raised by plaintiffs in error and was the most serious factual issue in the entire case.

The majority of the Court is correct, in saying that the only evidence supporting the finding of the Corporation Commission that there was a single common source of supply was opinion evidence. In other words, the basic and fundamental fact—the existence of a single common source of supply, is, in the very nature of things, only an uncertain conclusion, because it concerns a situation which may or may not exist 6,000 feet underneath the surface.

It is contended that any police power statute, the life and validity of which depends upon the determination of a fact or condition which is not susceptible of positive determination, should not be enforced upon non-consenting parties and their private rights where there is any reasonable dispute concerning the existence of such fact. In this case the existence of the basic and fundamental fact is seriously in dispute and cannot be definitely proved, but merely concluded on the basis of opinion evidence. It is arbitrary and unreasonable to impose the statute and the Plan of Unitization upon the expert opinion of one witness as against the expert opinion of other witnesses equally well qualified.

(D) The division of interest formula had many unfair [fol. 167] and unreasonable features which were argued at length. (See our brief 278-297). The division of interest formula must be considered as much a part of the Unitization Act in this case as any other express provision. The facts and circumstances concerning the application of this formula were undisputed and showed that the formula in

many instances had no reasonable or scientific support in any respect. On the constitutional issues the majority of the Court gave no consideration whatever to the objections presented to this division of interest formula.

(E) Plaintiffs in error contended in brief and on oral argument that all the facts and circumstances of the case had to be considered in connection with the constitutional issues. The majority of the Court again interpreted such contentions as being restricted to the sufficiency of the evidence. This was not our intention. There was no conflict in the known facts. The only questions were the interpretation or conclusions to be drawn from the known facts. Therefore, when the undisputed facts disclose that the Plan of Unitization was unreasonable in any respect, the whole Plan and the Unitization Act likewise became unreasonable. In other words, when it was argued in plaintiffs in error brief that there was not a single common source of supply (Brief 231-252), or that the proposed unit area had not been reasonable defined (Brief 258-269), or that the proposed Plan of Unitization was not suited to the needs and requirements of the proposed unit and unit area (Brief 269-270), or that the proposed Plan of Unitization was not fair, reasonable and equitable (Brief 277-278), or that the formula for the division of interest was not generally fair, equitable or reasonable (Brief 278-297, or that the evidence [fol. 168] showed that the Plan of Unitization was particularly unfair, inequitable and unreasonable as to the rights of The Palmer Oil Corporation (Brief 297-307), it was intended that these contentions would apply with equal force to the broad and general contention that the Unitization Act, as applied, (which includes the Unitization Act, the written Plan of Unitization, the Order of the Commission approving the Plan, and all other facts and circumstances), was an unreasonable and unwarranted exercise of the police power.

V

The majority of the Court endeavors to distinguish the present case from the controlling decision in the case of Carter v. Carter Coal Company, 298 U. S. 238, 80 L. ed.

1160, and State of Washington, ex rel. v. Roberge, 278 U. S. 116, 73 L. ed. 210, in the following language:

> "In the Carter case the donees of the power were given authority to make decisions determinable of the rights of others and in the Washington case the donees were given an arbitrary power to veto the exercise by others of their unquestioned rights. Neither situation obtains herein."

We submit that the quoted portion of the majority opinion emphasizes the analogy between the present case and the Carter case and the Washington case, and shows no real distinction whatsoever.

The majority opinion then quotes at length from Currin v. Wallace, 306 U. S. 1, 83 L. ed. 441, in an effort to show that legislative enactments may be made conditional upon the will of certain percentages in interest. The Currin case is far from being in point. In the first place, the Currin case involved legislation enacted by Congress under the commerce power, in which case equality is not required. The Supreme Court in that case, in its own opinion, [fol. 169] stated:

> "There is no requirement of uniformity in connection with the commerce power . . . undoubtedly the exercise of the commerce power is subject to the Fifth amendment . . .; but that amendment unlike the Fourteenth, has no equal protection clause."

In the second place, the legislation in the Currin case was complete inspection legislation which, if made effective in a particular market, was entirely subject to and under the supervision of the Government.

In the case of the Unitization Act, the Plan of Unitization is formulated by a percentage of private interests, is presented by a percentage of private interests, is made effective, operated and concluded by a percentage of private interests. The only part that any Governmental Agency plays in connection with the Unitization Act is to either reject or approve the Plan submitted without any definite guides or standards.

Conclusion

However laudable may be the pronounced purpose of the passage of the Unitization Act, and however the public good might possibly be served by compulsory unitization of an oil field, no public or governmental agency is empowered by the Unitization Act to create or maintain in being such a unit. Under the Unitization Act these rights are delegated solely to private parties with the exercise thereof within the voluntary discretion of the percents of interests of such private parties as expressed in the Act and in the private parties' own creation—the Plan of Unitization. This, another House of Babylon, must crumble and fall by its own weight.

[fol. 170] It is respectfully submitted that this Petition for Rehearing should be granted.

Claude Monnet, Coleman H. Hayes, Lynn J. Bullis, Jr., 1719 First National Building, Oklahoma City, Oklahoma, Mark H. Adams, Charles E. Jones, William I. Robinson, 1008 Brown Building, Wichita, Kansas, Attorneys for Plaintiffs in Error, The Palmer Oil Corporation, Paul Sterba and Paul Sterba, Jr., a minor, by and through his father and next friend, Paul Sterba.

[fol. 171] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

[Title omitted]

The Clerk is hereby directed to enter the following orders:

[Title omitted]

33,336

33,708

ORDER DENYING PETITIONS FOR REHEARING—Filed May 22, 1951

All petitions for rehearing and application for oral argument in the above styled and numbered causes denied.

Ben Arnold, Chief Justice.

[fol. 172] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

[Title omitted]

Leave is hereby granted to file this 28th day of May 1951, Ben Arnold, Chief Justice.

APPLICATION OF THE PALMER OIL CORP. ET AL. FOR LEAVE TO FILE SECOND PETITION FOR REHEARING AND ORDER THEREON—Filed May 28, 1951

Come now The Palmer Oil Corporation, Paul Sterba and Paul Sterba, Jr., a minor, by and through his father and next friend, Paul Sterba, and respectfully pray leave of Court to file second petition for rehearing in these con-
[fol. 173] solidated cases, and as ground therefor show the Court as follows:

1

The majority opinion of the Court in Holding that under this record there has been no unconstitutional delegation of legislative power has failed to differentiate between legislative enactments which fix and determine a policy of the state and simply delegate to others the enforcement of such predetermined policy in the administration of the Act and the situation here, where the propriety or advisability of determining policy with respect to a given area is dependent upon the will and caprice of a majority of affected owners.

2

The majority opinion ignores the fact that under the terms of the Act royalty owners are deprived of their property without due process of law. This result flows from the fact that the Act completely ignores their rights and permits the Corporation Commission, by approving a plan of unitization, to deprive them of valuable rights in a proceeding to which they are not parties, and of which no notice to them is required.

Respectfully submitted, Claude Monnet, Coleman H. Hayes, Lynn J. Bullis, Jr., 1719 First National

Bldg., Oklahoma City, Oklahoma, Mark H. Adams, Charles E. Jones, William I. Robinson, 1008 Brown Building, Wichita, Kans., Attorneys for Plaintiffs in Error, The Palmer Oil Corporation, Paul Sterba and Paul Sterba, Jr., a minor, by and through his father and next friend, Paul Sterba.

[fol. 174] BRIEF IN SUPPORT OF APPLICATION FOR LEAVE TO FILE SECOND PETITION FOR REHEARING

Point I

The Unitization Act constitutes an unwarranted and unconstitutional delegation of legislative power.

In the majority opinion, the contention that the Act is unconstitutional because it constitutes an unauthorized delegation of legislative power is disposed of on the authority of cases which, in effect, hold that a legislative body, having once adopted a policy, may (1) delegate to an executive or agency the power and duty to enforce the policy, or (2) make the enforcement of the policy dependent upon the consent of a portion of the affected individuals.

The Act in question does neither. Although it contains recitations calculated to support, it as an exercise of the police power, it does not fix the policy of the state. Rather, it says that the Corporation Commission may fix and determine the policy after a hearing, but jurisdiction of the Commission itself to either determine or carry out the policy is dependent upon the initiation of a request therefor by fifty per cent of the affected parties. It is perfectly clear that the Legislature has in effect said, "It may be advisable, depending upon circumstances, to subject certain producing areas to unit operation. The Legislature is not [fol. 175] equipped with facilities to obtain the information necessary to determine the propriety of so doing. Consequently, we will vest in the Corporation Commission the power to make such determination."

Had the Legislature stopped at this point, the validity of the Act might have been sustained under the authorities cited in the majority opinion. However, the Legislature

went further and made the question of determination dependent upon the will of lessees of record of fifty per cent or more of the area sought to be unitized. No case has been cited by counsel, and in our judgment none can be cited, in which a determination of legislative policy depends upon the will, whim or caprice or any percentage of the affected parties.

Although put in slightly different language, Federal District Judge Akerman, in Chester C. Fosgate Co., et al., v. Kirkland, et al., 19 Fed. Supp. 152, struck down a marketing agreement entered into pursuant to the Federal Agricultural Adjustment Act. 7 U. S. C. A., Sections 601 to 610, inclusive. That Act authorized the Secretary of Agriculture to promulgate a handling order which should be binding upon all handlers of agricultural products upon the execution of an agreement signed by fifty percent of the handlers. Although the Act provided an alternative [fol. 176] method by which an order might be made without the agreement of the statutory fifty per cent, the Court concluded, in view of all of the provisions of the Act, such an agreement was a necessary requirement, and in holding it to constitute an unwarranted delegation of legislative power, said:

> "Since the marketing agreement must be signed by 50 per cent, of handlers, and also by the Secretary, each occupies the position of a separate branch of the legislative body. Such delegation of authority to a part of those engaged in a particular industry has lately been condemned by several decisions of the Supreme Court of the United States, and by several decisions of the State Supreme Courts."

Numerous cases are cited in support of the conclusion after a discussion of which the writer of the opinion concludes:

> "To permit the handlers of 50 per cent. of the volume of any commodity to have such power in the making of a marketing agreement which when approved by an order of some executive official shall have the force of law, is to my mind exactly what the Supreme Court

said it is, namely, 'Legislative delegation in its most obnoxious form,' and in consequence, constitutes a violation of the Fifth Amendment to the Federal Constitution."

Just as it was necessary in the cited case to have, First, the concurrence, consent or agreement of fifty per cent of the parties involved, and in addition an order by the Secretary of Agriculture, under the Act here involved it is necessary to have, first, a petition filed by 50 per cent of the affected lessees, and second, an order of the Corporation Commission approving it.

[fol. 177] Other cases to the same effect are collected in 3 A. L. R. (2d) 188. Concerning such cases the annotator says:

"Statutes which lodge the power to initiate administrative legislation on prices, wages, or hours exclusively in private groups and limit the power of the appropriate administrative agency to approval or disapproval of such legislation, in some instances without authorizing them to modify or revise it, have been held invalid as an improper delegation of legislative power in a number of cases."

Of other cases, which include those from this Court relating to price legislation, the annotator says:

"On the other hand, where a statute authorizes the appropriate administrative agency to enact, upon its own initiative, legislation on prices, wages, and hours under adequate standards fixed by the statute, it is not, merely because it authorizes also private groups to initiate such legislation subject to the objection that it improperly delegates legislative power to private groups."

Another group of cases, in which Currin v. Wallace, 306 U. S. 1, heavily relied upon by the majority, falls, is discussed by the annotator, who recognizes the clear distinction between such cases and those like the case at bar. The distinction is plain and simple. As pointed out in the Currin case, a legislative body may place restrictions upon

the operation of its own regulations by including as a condition the approval of a group of affected parties. However, as we have pointed out, the Legislature has not in this case imposed any restrictions upon the operation of [fol. 178] an ascertained policy, but has in effect authorized the Corporation Commission to impose restrictions contingent upon a petition therefor by a percentage of private parties. We unhesitatingly reassert that there is no case which approves such a delegation of legislative authority.

We also feel that no court should ever hold that a legislative body may delegate to another legislative body the power to adopt a policy provided that fifty per cent of the affected class desire the adoption of a policy relating to a given subject. Frankly, we think that this Court, in approving the legislation, overlooked the fact that thereunder the adoption of a policy, and not the enforcement thereof, if wholly dependent upon the wishes of fifty per cent of the affected parties, who may invest the Corporation Commission with the power so to do, or deprive it of such power, with or without reason, cause or justification.

We therefore respectfully submit that the authorities relied upon do not support the conclusion of the Court, that there are no authorities which do, and that the present majority opinion is in conflict with all well considered cases which have dealt with similar questions.

Point 2

The Act is violative of the due process clauses of the State and Federal Constitutions.

[fol. 179] In the majority opinion, the position of royalty owners is considered only from the standpoint that they are not afforded the same right of protest as are their lessees. It is stated, however, after pointing out that they may be inaccessible and could afford little, if any, helpful information if available. "But they are granted the right of an appeal from the action of the Commission, and this case is an example of its exercise."

This treatment and disposition of the interests of the royalty owners completely overlooks the fact that whether

they are accessible or inaccessible, whether they might provide helpful information, once a proceeding is initiated by fifty per cent of their lessees or not, they do have extremely valuable rights which are affected by any unit plan of operation. To hold that they may be deprived of their rights and have their property taken away in a proceeding to which they are not even parties is unthinkable. No one would deny that under the unit plan here approved, many of the royalty owners have been deprived of substantial property rights. It's true that some of them, in an effort to protect their rights, by leave of the Corporation Commission, appeared and asserted them. They were able to do so only by the grace of the Commission. Under no provision of the Unitization Act are they necessary parties to the proceeding, nor is there any provision in the Act [fol. 180] for notification of the pendency of any such proceeding. The present opinion, which so lightly brushes aside the total failure of the Act to take their rights into accounty, is contra to the basic concept that no person shall be deprived of his property without due process of law.

One of the latest cases in which the sanctity of property and property rights is again emphasized, is Mullane v. Central Hanover Bank & Trust Co., 339 U. S. 306. There was involved in that case a statute of the State of New York which authorized the trustee of a collective trust to procure a judicial settlement of its accounts with beneficiaries in a proceeding brought for that purpose. The only provision for notice to the beneficiaries was that publication be made in a local newspaper. The validity of the Act was challenged by a beneficiary on the ground that it was insufficient to afford due process. All of the New York Courts upheld the validity of the Act. The Supreme Court of the United States, on April 24, 1950, reversed, saying:

> "We hold the notice of judicial settlement of accounts required by the New York Banking Law, Section 100-C (12) is incompatible with the requirements of the Fourteenth Amendment as a basis for adjudication depriving known persons, whose whereabouts are also known, of substantial property rights."

In support of such holding, The Court called attention to the fact that:

> [fol. 181] "In two ways this proceeding does or may deprive beneficiaries of property. It may cut off their rights to have the trustee answer for negligent or illegal impairments of their interests. Also, their interests are presumably subject to diminution in the proceeding by allowance of fees and expenses to one who, in their names but without their knowledge, may conduct a fruitless or uncompensatory contest. Certainly the proceeding is one in which they may be deprived of property rights and hence notice and hearing must measure up to the standards of due process."

As we have heretofore suggested, we think no one would even suggest that royalty owners' rights may not be or were not jeopardized and affected by the order creating the unit. As a matter of fact, we know of no more drastic legislation than that here involved. Of course, we recognize that individual interests must in many instances give way to the public good. However, private property and contractual rights should not be destroyed without the affected parties at least having an opportunity to protect them. Such an opportunity is, under our form of government, ordinarily provided by giving to the affected party "his day in court". The Supreme Court in the Mullane case recognized, as do we, that oftentimes the interest of the state and that of individuals comes into conflict, and that a construction of the due process clause which would create impossible or impractical obstacles cannot be justified. However, the Court said:

> "Against this interest of the State we must balance the individual interest sought to be protected by the Fourteenth Amendment. This is defined by our holding that 'The fundamental requisite of due process [fol. 182] of law is the opportunity to be heard.' Grannis v. Ordean, 234 U. S. 385, 394, 34 S. Ct. 779, 783, 58 L. Ed. 1363. This right to be heard has little reality or worth unless one is informed that the matter is pending and can choose for himself whether to appear or default, acquiesce or contest."

Concerning the nature of the notice required under the due process clause, the Supreme Court, in accordance with its prior holdings, reiterated that,

> "An elementary and fundamental requirement of due process in any proceeding which is to be accorded finality is notice reasonably calculated under all the circumstances, to apprise interested parties of the pendency of the action, and afford them an opportunity to present their objections."

In holding that notice by publication was inadequate, the Court called attention to the fact that the trustee in most instances was aware of the names and addresses of the beneficiaries, and as to them the Court said:

> "As to known present beneficiaries of known place of residence, however, notice by publication stands on a different footing. Exceptions in the name of necessity do not sweep away the rule that within the limits of practicability notice must be such as is reasonably calculated to reach interested parties. Where the names and post office addresses of those affected by a proceeding are at hand, the reasons disappear for resort to means less likely than the mails to apprise them of its pendency."

Similarly, in the instant case, the names and addresses of royalty owners are within the knowledge of the lessees who, under the Act, so completely dominate the proceedings. It is common knowledge that in producing areas lessees who are authorized by lessors to dispose of the [fol. 183] production know the names and whereabouts of those who are entitled to participate in the royalty. Consequently, the reasoning of the Supreme Court is clearly applicable here, and the failure of the Act to provide for such notice deprived it of validity because violative of the due process requirement.

In this connection, for the purpose of emphasis, we call the Court's attention to the fact that the legislation involved completely ignores the rights and interests of the royalty owners. Nowhere in the Act are they accorded any consideration. As a matter of fact, they are only men-

tioned because under the Act their rights may be decreased. The majority opinion tacitly approves this complete disregard, because it is pointed out, "but they are granted the right of an appeal." We are aware of no case which holds or intimates that the granting of a right of appeal meets the requirement of due process. As a matter of fact, the rule is generally stated that the right of appeal is no part of due process. The reasons for giving a person his day in court certainly dispel any idea that the right to appeal may be substituted therefor. For this reason alone, then, we respectfully submit that the Act involved is fatally defective in that it authorizes the destruction and impairment of property and property rights without due process of law.

[fol. 184] Conclusion

This case has received unusual consideration at the hands of this Court. It has been pending for more than two years. The division of the Justices is sharp and clear. For that reason, we have refrained from a detailed discussion of the provisions of the Act or its effect upon the parties involved. We recognize that the majority opinion and those registering dissent have been carefully prepared and reflect the considered views of the authors. We do feel, however, that the majority opinion is in conflict with fundamental constitutional concepts, and particularly those relating to the delegation of legislative power and due process. We have attempted to point out such conflict, and respectfully submit that the majority opinion should be withdrawn and one establishing the invalidity of the legislation involved promulgated by this Court.

We therefore respectfully ask the Court for leave to file Second Petition for Rehearing, and believing that the nature of the litigation is such that its affect is of widespread public interest, we further pray for the opportunity to further orally argue the case before this Court.

Respectfully submitted, Claude Monnet, Coleman H. Hayes, Lynn J. Bullis, Jr., Mark H. Adams, Charles E. Jones, William I. Robinson, Attorneys for Plaintiffs in Error, The Palmer Oil Corporation, Paul Sterba, and Paul Sterba, Jr.

[fol. 185] IN SUPREME COURT OF OKLAHOMA

[Title omitted]

PROOF OF SERVICE

I, Coleman Hayes, one of the attorneys for The Palmer Oil Corporation and Paul Sterba and Paul Sterba, Jr., Plaintiffs in Error in the above entitled causes, certify that I served the attached Application for Leave to File Second Petition for Rehearing upon the defendants in error by mailing a copy of same, postage prepaid, to their attor-

[fol. 186] neys of record, on May 28, 1951, as follows:

Harry Page, Tulsa, Oklahoma,
Attorney for Amerada Petroleum Corporation.
Brown, Darrough & Ball, Oklahoma City, Oklahoma,
Attorneys for Anderson-Prichard Corporation.
F. H. Bacon, Bartlesville, Oklahoma,
Attorney for Cities Service Oil Company.
Wm. C. Liedtke, Tulsa, Oklahoma,
Attorney for Gulf Oil Corporation.
Wallace Hawkins, Dallas, Texas,
Attorney for Magnolia Petroleum Company.
Don Anderson, Oklahoma City, Oklahoma,
Attorney for Stephens Petroleum Company and Ray Stephens, Inc.
Paul E. Taliaferro, Tulsa, Oklahoma,
Attorney for Sunray Oil Corporation.
Rayburn L. Foster, Bartlesville, Oklahoma,
Attorney for Phillips Petroleum Company.
Hatcher & Bond, Chickasha, Oklahoma,
Attorneys for Tom Potter, et al.
Floyd Green, Oklahoma City, Oklahoma,
Attorney for the Corporation Commission.

/s/ Coleman Hayes, Attorney.

[fol. 187] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

No. 33336

IN THE MATTER OF THE PETITION FOR THE CREATION OF THE WEST CEMENT MEDRANO UNIT HAVING FOR ITS PURPOSES THE UNITIZED MANAGEMENT, OPERATION AND FURTHER DEVELOPMENT OF THE WEST CEMENT MEDRANO COMMON SOURCE OF SUPPLY OF OIL AND GAS IN CADDO COUNTY, OKLAHOMA, THE DEFINING OF THE UNIT AREA THEREOF AND THE PRESCRIBING OF THE PLAN OF UNITIZATION APPLICABLE TO SUCH UNIT AND UNIT AREA

Service copy. Leave is hereby granted to file this 1 day of June, 1951, Ben Arnold, Chief Justice.

APPLICATION OF KIT C. FARWELL ET AL. FOR LEAVE TO FILE SECOND PETITION FOR RE-HEARING AND ORDER THEREON—Filed June 1, 1951

Come now the plaintiffs in error, Kit C. Farwell, Frank Phohlemann, Jane A. Jones, Amerlia Beemer, Florence M. Plummer, Hazel A. Plummer, Virgie M. Updegrove, Thomas O. Plummer, Otis Oaks, Elizabeth Paine, Chas. T. Williams, Regina Schlitt, Ben P. Butler, Ben P. Holland, T. J. Butler, James A. Holland, Nettie Melton & Fannie McDowell, J. P. McKenna, J. S. Smith, Eva I. Pierson, Ernest S. Pierson, Eva J. Mead, Ella Pierson Price, Clarence M. Pierson, Richard E. Pierson, Minnie E. P. Mooney, L. L. Edwards, T. J. Gann, M. M. Davis, J. F. Ball, Grace E. Niles, Eva Parker, nee Niles, J. D. Davis, Lucy E. Davis, Oza Medrano, Oza Medrano, Gdn., Jasper Edwards, Ted R. Edwards, Josephens Welch, Clinton Edwards, Jessie Mullinax, Opal Coon, Wayne Rowe, Mae M. Rowe, Wanne Row, &. Edith Weidge, Carrie C. Dixson, Offie Lindsey, Grace Maude Lindsey, T. B. Walker, Mary A. Farris, Leslie Newton Davis, Winifred M. Prentice, Eugene L. Prentice, Maxine Ruth Prentice, John C. Prentice, Ida B. Ribers, Dorothy McClaran, Max E. McClaran, George A. McClaran, Maurice McClaran, Bob White Oil Company, Clyde Kahle,

B. E. Johnson, Virginia McIntyre, M. L. McIntyre and Tom Potter and respectfully shows that heretofore to wit on [fol. 188] March 20, 1951, a judgment and decision of this Court was rendered affirming the judgment and order of the Corporation Commission of the State of Oklahoma in favor of the defendants in error and against the plaintiffs in error; that thereafter on May 1, 1951, plaintiffs in error filed in said cause, their Petition for Re-Hearing which petition was, by the Court denied on May 22, 1951.

That the opinion of this Court is in conflict with the Constitution of the State of Oklahoma and the Constitution of the United States, and the decision of the Supreme Court of the United States in the case of Mullane vs. Central Hanover Bank & Trust Company, 339 U. S. 306, decided April 24, 1950, as more fully appears from the attached Second Petition for Re-Hearing.

Wherefore, plaintiffs in error pray for leave to file their Second Petition for Re-Hearing, a copy of which is hereto attached with brief and support thereof.

Respectfully submitted, Hatcher & Bond, By Reford Bond, Jr., Attorneys for the above named Plaintiffs in Error, Chickasha, Oklahoma.

State of Oklahoma,
County of Grady, ss.

Reford Bond, Jr., of lawful age, being duly sworn states that he is the attorney of record for the within named plaintiffs in error and hereby certifies that service of the within and foregoing Application with Second Petition for Re-Hearing and Brief Attached, was made by mailing on May 31, 1951 to Mr. R. M. Williams, Chief Counsel, for all of the defendants in error, c/o Phillips Petroleum Company, Bartlesville, Oklahoma, a true and correct copy thereof.

Reford Bond, Jr., Attorney for the Plaintiffs in Error.

Subscribed and sworn to before me this 31st day of May, 1951. My Commission expires: January 30, 1955. Leona Bond, Notary public.

[fol. 189] IN SUPREME COURT OF OKLAHOMA

[Title omitted]

SECOND PETITION OF KIT C. FARWELL ET AL. FOR REHEARING

Come now the Plaintiffs in Error, Kit C. Farwell, Frank Phohlemann, Jane A. Jones, Amerlia Beemer, Florence M. Plummer, Hazel A. Plummer, Virgie M. Updegrove, Thomas O. Plummer, Otis Oaks, Elizabeth Paine, Chas. T. Williams, Regina Schlitt, Ben P. Butler, Ben P. Holland, T. J. Butler, James A. Holland, Nettie Melton & Fannie McDowell, J. P. McKenna, J. S. Smith, Eva I. Pierson, Ernest S. Pierson, Eva J. Mead, Ella Pierson Price, Clarence M. Pierson, Richard E. Pierson, Minnie E. P. Mooney, L. L. Edwards, T. J. Gann, M. M. Davis, J. F. Ball, Grace E. Niles, Eva Parker, nee Niles, J. D. Davis, Lucy E. Davis, Oza Medrano, Oza Medrano, Gu., Jasper Edwards, Ted R. Edwards, Josophens Welch, Clinton Edwards, Jessie Mullinax, Opal Coon, Wayne Rowe, Mae M. Rowe, Wanne Rowe, & Edith Weidge, Carrie C. Dixson, Offie Lindsey, Grace Maude Lindsey, T. B. Walker, Mary A. Farris, Leslie Newton Davis, Winifred M. Prentice, Eugene L. Prentice, Maxine Ruth Prentice, John C. Prentice, Ida B. Ribers, Dorothy McClaran, Max E. McClaran, George A. McClaran, Maurice McClaran, Bob White Oil Company, Clyde Kahle, B. E. Johnson, Virginia McIntyre, M. L. McIntyre, and Tom Potter, and respectfully represent to the Court that on the 20th day of March, 1951 a decree and judgment was [fol. 190] rendered by this Court in said cause against the plaintiffs in error and that thereafter on May 1, 1951 the plaintiffs in error filed herein their Petition for Re-Hearing which was, by this Court, denied on 22 May 1951.

That the plaintiffs in error adopt all of the allegations and objections as to the said judgment and decree of March 20, 1951 and in addition thereto as grounds for a re-hearing in said cause show to the Court as follows:

That under the terms of the act of the Oklahoma Legislature in question, the royalty owners, plaintiffs in error herein, are deprived of their property and property rights without a due process of law for the reason that said act

provides for no notice of the proceeding under which the said property and rights are taken away from the said plaintiffs in error. That the failure of said act provides for such notice is fatal and contravenes the provisions of the Constitution of the United States relative to due process.

The said decision is contrary to the rule laid down by the Supreme Court of the United States in the case of Mullane vs. Central Hanover Bank & Trust Company, 339 U. S. 306, which held a statute passed by the New York State Legislature unconstitutional for its failure to provide for personal service on persons whose whereabouts were known to the persons invoking the legislative act to relieve said known persons of property or property rights.

We invite the Court to examine the authority submitted and compare the New York statute involved therein with the statute before this court.

[fol. 191] Wherefore, plaintiffs in error pray that a rehearing in said cause be granted by the Honorable Court.

Hatcher & Bond, By Reford Bond, Jr., Attorneys for Plaintiffs in Error, hereinabove named, Chickasha, Oklahoma.

[fol. 192] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

[Title omitted]

The Clerk is hereby directed to enter the following orders:

33,336

33,708

ORDER DENYING LEAVE TO FILE SECOND PETITION FOR REHEARING, ETC.—June 5, 1951

All applications for leave to file second petition for rehearing and motion for oral argument in the above styled and numbered causes denied.

Ben Arnold, Chief Justice.

[fol. 193] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

[Title omitted]

PETITION FOR APPEAL—Filed July 30, 1951

To the Honorable Ben Arnold, Chief Justice of the Supreme Court of the State of Oklahoma, or, to an Honorable Justice of the Supreme Court of the United States to Whom This Petition May be Presented:

[fol. 194] Come now The Palmer Oil Corporation, a corporation, Paul Sterba, and Paul Sterba, Jr., by and through his natural guardian and next friend, Paul Sterba, hereinafter referred to as "Appellants", by their respective attorneys signatory hereto, and state and show to the Court:

First: That on March 20, 1951, in the above entitled Consolidated cause, the Supreme Court of the State of Oklahoma, the highest Court of said State in which a decree or judgment in said cause could be had, rendered a decree and judgment against and adverse to the rights of Appellants, affirming and upholding as valid an order of the Corporation Commission of the State of Oklahoma, entered as Order No. 20289, in Cause CD 1308, on September 5, 1947, which decree and judgment sustained as valid certain statutes of the State of Oklahoma and the Order of said Commission approving a Written Plan of compulsory Unitization covering what is known as the Medrano Sand of the West Cement Oil and Gas Field in Caddo County, Oklahoma.

Second: That in the records and proceedings in the rendition of said decree and judgment, there was drawn in question by Appellants, the validity of said Order of the Corporation Commission of the State of Oklahoma, the Written Plan of Compulsory Unitization approved thereby, and the respective statutes, being House Bill 339 of the 1945 Oklahoma Legislature (Title 52, Oklahoma Statutes [fol. 195] Cumulative Supplement 1949, Sections 286.1 to 286.17, both inclusive), on the grounds that said Order,

Written Plan of Compulsory Unitization and the respective statutes referred to upon which said Order and Plan were based, as applied to the property and operations of Appellants under the undisputed and indisputable evidence in the record were repugnant to and violated the equal protection, due process and contract clauses of the Constitution of the United States.

Third: That appellants, considering themselves aggrieved by the final decree and judgment of the Supreme Court of Oklahoma as aforesaid, hereby pray that an appeal be allowed to the Supreme Court of the United States from said decree and judgment and from each and every part thereof; that citation be issued in accordance with law; that an order be made with respect to the appeal bond to be given by said Appellants, and that the amount of security be fixed by the order allowing the appeal, and that the material parts of the record, proceedings and papers upon which said final judgment and decree was based, duly authenticated, be sent to the Supreme Court of the United States in accordance with the Rules in such case made and provided.

Fourth: That only the originals of the transcript, exhibits, documents and other parts of the record are on file, which must be submitted to the Supreme Court of the [fol. 196] United States; that a prolonged period of time and a great deal of expense would be required to prepare copies thereof for the transcript of record on appeal; that pursuant to Rule 10, paragraph (4) of the Rules of the Supreme Court of the United States, Appellants request that the court authorize that the originals of all documents, transcripts, exhibits, or other parts of the record be transmitted as a part of the record upon appeal to be filed in the Supreme Court of the United States.

Respectfully submitted, Coleman Hayes, Oklahoma City, Oklahoma, Mark H. Adams, Wichita, Kansas, Charles E. Jones, Wichita, Kansas, Counsel for Appellants.

[fol. 197] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

[Title omitted]

ASSIGNMENT OF ERRORS—Filed July 30, 1951

The Palmer Oil Corporation, a corporation, and Paul Sterba and Paul Sterba, Jr., a minor, by and through his father and next friend, Paul Sterba, appellants in the above entitled consolidated cause in connection with their appeal to the Supreme Court of the United States, hereby file the following Assignment of Errors upon which they will rely in their prosecution of said appeal from the final Judgment and Decree of the Supreme Court of the State of Oklahoma entered on March 20, 1951.

[fol. 198] The Supreme Court of the State of Oklahoma erred in deciding that Order No. 20289 of the Corporation Commission of Oklahoma, in Cause CD 1308, and the Plan of Compulsory Unitization approved thereby and the statutes (House Bill 339 of the 1945 Legislature, Title 52, Oklahoma Statutes Supplement 1949, Sections 286.1 to 286.17, both inclusive), upon which said Court determined said Order and Plan were authorized, as construed and applied to appellants by the decision and judgment of said Court under the undisputed and indisputable evidence in the record, did not deprive appellants of their property without due process of law or deny to them to the equal protection of the laws in contravention to the provisions of Section I of the Fourteenth Amendment to the Constitution of the United States, and did not impair the obligation of appellants' leasehold contract in contravention of Section 10, Article I of the Constitution of the United States, because

(a) Said Order, Plan and Statutes are an unreasonable exercise of the police power.

(b) Said Order and the findings in support thereof are contrary to the undisputed and indisputable evidence in the record in that the record shows no waste of oil or gas, as defined or contemplated by the Oklahoma Conservation Statutes, was being committed,

that correlative rights of producers, landowners and royalty owners in and to oil and gas were being protected and conserved in accordance with the general conservation statutes of the State of Oklahoma and the subsisting Orders of the Commission thereunder. [fol. 199] (c) Said Order, Plan and statutes completely deprive appellants of their property and places it in the hands of private parties to control its management, further development and operation.

(d) Said Order, Plan and statutes completely divest personal, property and contract rights vested and established long before the making of said Order and Plan and the enactment of said statutes.

(e) Said statutes are too broad, vague and unspecific to constitute any reasonable guide to the Commission in making of any Order approving any Plan of Unitization thereunder.

(f) The undisputed evidence establishes that there was no single common source of supply of oil and gas, which is necessary to justify any type of oil and gas conservation statutes.

(g) Said Order, Plan and statutes provide for and constitute more than mere regulations of the business of producing oil and gas, completely taking away from appellants their contractual rights under the oil and gas lease and their rights to possess and develop the property for oil and gas, substituting therefor merely [fol. 200] a right to share in the proceeds arising from oil and gas production from the entire unit.

(h) Appellants, —, Paul Sterba, Jr., as owners of the land and royalty, are not, under the statutes, Order or Plan of Unitization, given any voice in respect to any matter concerning the compulsory unitization.

(i) Said statutes, Order and Plan of Unitization provide for the taking of private property not for a public use or public purposes, but for private purposes and private gain.

(j) Under said statutes percentages of private parties are authorized to decide whether a particular oil and gas field should be unitized and, if so, the type or plan of unitization, and their private decision, at their

will, is submitted to the Commission, a certain percentage of private parties still have the right to completely nullify the Plan or amend the Plan, or enlarge the Plan, and in any event, control the future operations under the Plan and the winding up and closing thereof; the Commission has no right of its own to initiate the proceedings or formulate the Plan, amend [fol. 201] or change the Plan, or otherwise control the Plan, except its power under the general conservation laws.

(k) Said statutes, Order and Plan provide for an unlawful delegation to private parties of the authority to determine legislative policy on any oil field within the State of Oklahoma, and particularly the West Cement Field.

(l) Said statutes, Order and Plan of Unitization unlawfully delegate arbitrary legislative authority to certain percentages of private persons to determine the legislative policy in respect to any oil field within the State of Oklahoma, and particularly the West Cement Field.

(m) Said statutes, Order and Plan unlawfully delegate to private parties the judicial power of determining the rights of royalty owners and minority lessees in respect to any oil field within the State of Oklahoma, and particularly the West Cement Field.

(n) Said Order and Plan unlawfully delegate arbitrary judicial and legislative power to private parties to determine the rights of royalty owners within any field of the State of Oklahoma, and particularly the West Cement Field.

[fol. 202] (o) Said statutes, Order and Plan provide for drastic changes in contractual and property rights which are not reasonably necessary to promote conservation of Oil and gas or prevent waste thereof.

(p) Said statutes, Order and Plan provide for arbitrary, unreasonable and capricious procedures and methods by which private parties determine rights of other private parties in and to any oil field of the State of Oklahoma, and particularly the West Cement Field.

(q) The Order and Plan are unreasonable, arbitrary

and capricious and are not based upon the undisputed and indisputable evidence in the record.

(r) The undisputed and indisputable evidence showed conclusively that geological faults separated the Medrano Sand in the West Cement Field into several, separate common sources of supply.

Wherefore, Appellants, The Palmer Oil Corporation, a corporation, Paul Sterba and Paul Sterba, Jr., a minor, by and through his father and next friend, Paul Sterba, pray that the final Judgment and Decree of the Supreme Court of the State of Oklahoma be reversed, and for such other relief as the Court may deem fit and proper.

Coleman Hayes, First National Building, Oklahoma City, Oklahoma.

[fol. 203] Mark H. Adams, 1008 Brown Building, Wichita, Kansas.

Charles E. Jones, 1008 Brown Building, Wichita, Kansas.

[fol. 204] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

[Title omitted]

ORDER ALLOWING APPEAL AND THAT ORIGINAL RECORDS BE FORWARDED TO THE SUPREME COURT OF THE UNITED STATES —Filed July 30, 1951

The Palmer Oil Corporation and Paul Sterba and Paul Sterba, Jr., a minor, by and through his father and next friend, Paul Sterba, Appellants, having made and filed their petition praying for an appeal to the Supreme Court of the United States from the final judgment and decree of this Court in said consolidated cause entered March 20, 1951, and from each and every part thereof, and having presented their Assignment of Errors and *and* prayer for [fol. 205] reversal and their statement as to the jurisdiction of the Supreme Court of the United States on appeal pursuant to the Statutes and Rules of the Supreme Court of the United States in such cases made and provided, and

being advised of the propriety of transmitting the original records,

Now, therefore, it is ordered as follows:

(a) That said appeal be and the same is hereby allowed.

(b) That the amount of the appeal bond be and the same is hereby fixed in the sum of $500.00, with good and sufficient surety, and shall be conditioned as may be required by law.

(c) That Citation shall issue in accordance with law.

(d) That the originals of the transcript, exhibits, documents and other parts of the record on file be forwarded in lieu of copies thereof to the Clerk of the Supreme Court of the United States as part of the transcript of the record on the appeal herein.

Dated this 30 day of July, 1951.

Ben Arnold, Chief Justice.

[fols. 206-212] Cost bond on appeal for $500.00 approved and filed July 30, 1951 omitted in printing.

[fols. 213-214] Citation in usual form omitted in printing.

[fol. 215] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

[Title omitted]

PRAECIPE FOR TRANSCRIPT OF RECORD—Filed July 30, 1951

To the Clerk of the Supreme Court of the State of Oklahoma:

You are hereby requested to make copies of or furnish the complete transcript of the original record in the above captioned consolidated cause, including all original exhibits, pleadings, papers, or other documents, to be filed in the Supreme Court of the United States pursuant to

an appeal allowed in the above entitled cause from the [fols. 216-219] judgment and decree of the Supreme Court of the State of Oklahoma, entered on March 20, 1951, and made final on June 5, 1951, by the denial of application for leave to file Second Petition for Rehearing.

Coleman Hayes, First National Building, Oklahoma City, Oklahoma; Mark H. Adams, 1008 Brown Building, Wichita, Kansas, Charles E. Jones, 1008 Brown Building, Wichita, Kansas, Attorneys for Appellants.

[fol. 220] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

[Title omitted]

PETITION — OF KIT C. FARWELL ET AL. FOR APPEAL—Filed July 30, 1951

To the Honorable Chief Justice of the Supreme Court of the State of Oklahoma:

1. Your petitioners, Kit C. Farwell, Frank Phohlemann, L. A. Davis, Jane A. Jones, Amerlia Beemer, Florence M. Plummer, Hazel A. Plummer, Virgie M. Updegrove, Thomas O. Plummer, Otis (I. O.) Oaks, Elizabeth Paine, Chas. T. Williams, Regina Schlitt, Ben P. Butler, Ben P. Holland, Callie F. Butler, James A. Holland, Nettie Melton, Fannie McDowell, J. P. McKenna, J. S. Smith, Eva I. Pierson, Ernest S. Pierson, Eva J. Mead, Ella Pierson Price, Clarence M. Pierson, Richard E. Pierson, Minnie E. P. Mooney, L. L. Edwards, T. G. Gann, M. M. Davis, J. F. Ball, Grace E. Niles, Eva Parker, nee Niles, J. D. Davis, Lucy E. Davis, Oza Medrano, Oza Medrano, Guardian, Jasper Edwards, Ted R. Edwards, Josophens [fol. 221] Welch, Clinton Edwards, Jessie Mullinax, Opal Coon, Wayne Rowe, Adm., Mae M. Rowe, Wanne Rowe, Edith Weidge, Carrie C. Dixon, Offie Lindsey, Grace Maude Lindsey, T. B. Walker, Mary A. Farris, Leslie Newton Davis, Winifred M. Prentice, now Graney, Eugene L. Prentice, Maxine Ruth Prentice, John C. Prentice, Ida B. Rivers,

Dorothy McClaran, Max E. McClaran, George A. McClaran, Maurice McClaran, Bob White Oil Company, Clyde Kahle and Tom Potter respectfully show that on the 26th day of March, 1951, The Supreme Court of the State of Oklahoma rendered a judgment herein in favor of the defendants-in-error and against the plaintiffs-in-error, in which said judgment and proceedings had prior thereto in this cause certain errors were committed, to the prejudice of the petitioners, all of which more in detail appears in the Assignments of Error filed with this petition.

2. That after the rendition of said judgment, and on the 1st day of May, 1951, your petitioners filed a petition for rehearing; that thereafter, on the 22nd day of May, 1951, an order was made by this court denying said petition for rehearing. Thereupon an opinion was filed in this cause by this court, affirming the judgment of the Corporation Commission of the State of Oklahoma, which opinion is a part of the record in this cause.

3. And your petitioners, the respondents below, respectfully show that there was a judgment in said cause by the Corporation Commission of the State of Oklahoma, in favor of the defendants-in-error and against your petitioners whereby the terms, both express and implied, of the lease contracts between the respondent land and mineral owners and the applicant lessees were abrogated and there was substituted therefor a new lease contract whereby

[fol. 222] (a) The lands and mineral rights of the owners were consolidated into one lease;

(b) The lessees were relieved of all obligations to the owners under the former leases without compensation to the owners;

(c) An arbitrary portion fixed by the applicants of 1/8 of the total oil and gas produced from the area was assigned to each lessor in lieu of his contractual royalty.

(d) An arbitrary portion, fixed by the applicants of the proceeds of the remaining 7/8 of the oil and gas after deduction of unlimited expenses was assigned to each lessee;

(e) An arbitrary value of the well machinery and structures of each lessee was fixed by the applicants and provisions made for the recovery thereof by each lessee;

(f) And provision was made for the owners of the majority interest, so arbitrarily fixed, to select an operator for the operation and management of the lease.

(4) To effectuate the judgment above set forth, the Corporation Commission of the State of Oklahoma made the following orders:

(a) Granted the applicant's Petition.

(b) Authorized and approved the creation of the West Cement Medrano unit as prayed in the petition.

(c) Approved the plan of unitization attached to the applicant's petition. (The details of the "Plan" constitute the judgment above recited) which said judgment upon appeal to the Supreme Court of the State of Oklahoma, was affirmed by said court.

[fol. 223] 5. And your petitioners further respectfully show that the said Supreme Court of the State of Oklahoma is the highest court of the State of Oklahoma in which a decision in said cause could be had; and your petitioners claim the right to remove said cause to the Supreme Court of the United States by appeal, under the statutes of the United States authorizing an appeal from state courts, inasmuch as in said judgment of the Supreme Court of the State of Oklahoma, and the proceedings in said cause, certain errors were committed to the prejudice of your petitioners, all of which will more in detail appear from the assignments of error which are filed with this petition.

6. And because your petitioners claimed in said cause that the Supreme Court of the State of Oklahoma erred in holding:

(a) That legislative enactments are only to be set aside when they involve *such palpable abuse of power and lack of reasonableness to accomplish a lawful end* that they may be said to be *arbitrary, capricious and unreasonable* and hence *irreconcilable with the conception of due process of law;*

(b) That the police power of the state extends to defining the correlative rights of owners in a common source of oil and gas supply providing for the management, opera-

tion and further development of such common source of supply and distributing the proceeds thereof among those entitled thereto;

(c) That House Bill 339 of the 1945 Oklahoma Legislature (Title 52 O. S. Supp. 1947 Sec. 286.1 to 286.17) (Title [fol. 224] 52 OSA Sec. 286.1 to 286.17) is not violative of Sec. 10 Art. I or of the Fourteenth Amendment to the Constitution of the United States;

(d) That the Unitization act does not involve any unconstitutional delegation of legislative power.

(e) That Order 20289 of the Corporation Commission of the State of Oklahoma is not contrary to the constitutional law.

Wherefore, your petitioners claim and say that by a final judgment in a suit in the highest court of the State of Oklahoma, in which a decision in said cause could be had, there was drawn in question the validity of a statute of the State of Oklahoma on the ground of its being repugnant to Sec. 10, Art. I of, or the Fifth Amendment, or the Fourteenth Amendment to the Constitution of the United States, and the decision of said court was in favor of its validity. And Wherefore, and in accordance with the statutes in such cases made and provided, your petitioners pray that an appeal be allowed to the Supreme Court of the United States for the correction of the error, an assignment whereof is filed with this petition, and that a transcript of the record, proceedings, files, and papers in this cause, duly authenticated may be sent to the Supreme Court of the United States. And your petitioners pray for the allowance of a citation in due form of law; and your petitioners will ever pray.

Jim Hatcher, Reford Bond, Jr., Attorneys for Petitioners, Petroleum Building, Chickasha, Oklahoma.

[fol. 225] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

[Title omitted]

ORDER ALLOWING APPEAL—Filed July 30, 1951

Now on this 30 day of July, 1951, the petitioners and appellants, Kit C. Farwell, et al., in the above numbered and entitled case, through their attorneys, file herein and present to this Court their petition, also a statement of jurisdiction required by Rule 12 of the Supreme Court of the United States and an assignment of errors to be urged by them, and praying an appeal be granted to the Supreme Court of the United States, that the original record, proceedings and papers upon which the judgment herein was rendered, duly authenticated, may be sent to the Supreme Court of the United States and that such further proceedings and orders may be had as are proper in the premises. [fol. 226] On consideration whereof the Court allows the appeal to the Supreme Court of the United States and it is so ordered.

It is further ordered that the Clerk of the Supreme Court of the State of Oklahoma prepare the original record, proceedings and papers upon which the decision herein was rendered and duly authenticate and transmit the same to the Supreme Court of the United States within 40 days from the date hereof.

The Petitioners now presenting their bond in the sum of $250 executed by L. A. Davis, as principal and T. B. Walker and Ben Holland as sureties, it is ordered that said bond be and the same is hereby approved.

Ben Arnold, Chief Justice of the Supreme Court of the State of Oklahoma.

[fols. 227-228] Cost Bond on appeal for $250.00 approved and filed July 30, 1951 omitted in printing.

[fols. 229-231] Citation in usual form showing service on R. M. Williams omitted in printing.

[fols. 232-233] Citation in usual form omitted in printing.

[fol. 234] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

[Title omitted]

ASSIGNMENTS OF ERROR—Filed July 30, 1951

The Supreme Court of the State of Oklahoma erred in deciding that Order #20289 of the Corporation Commission of the State of Oklahoma, and the statutes of the State of Oklahoma, Title 52, Sections 286.1 to 286.17, inclusive, Oklahoma Statutes Annotated, called the Unitization Act, under the authority of which the said Order was made do not violate the United States Constitution. The particular Articles and Amendments violated are set forth as follows, to-wit:

First Assignment of Error

Article I, Section 10 of the United States Constitution in that said Order #20289 and said Unitization Act unreasonably, arbitrarily, discriminately and unnecessarily impair the obligations of the several separate contracts between the plaintiffs-in-error, lessors and defendants-in-[fol. 235] error, lessees.

Second Assignment of Error

The Fifth Amendment to the United States Constitution in that said Order #20289 and said Unitization Act unreasonably, arbitrarily, discriminately and unnecessarily takes the property of the plaintiffs-in-error without due process of law and without just compensation for the benefit of their opposing contractors, the defendants-in-error.

Third Assignment of Error

The Fourteenth Amendment to the United States Constitution in that said Order #20289 and said Unitization Act unreasonably, arbitrarily, discriminately and unnecessarily and without serving a useful purpose of a public nature, takes the property of the plaintiffs-in-error and gives it to their opposing contractors, the defendants-in-error *without due process of law* and denies to *and denies to* the plaintiffs-in-error the equal protection of the law in that

(a) The Act gives the defendants-in-error the right to file a "plan" with their petition, which "plan" arbitrarily divides the oil and gas, and arbitrarily fixes the compensation of lessees for wells, machinery, plants and structures taken by the defendants-in-error, which plan the Corporation Commission of Oklahoma can only approve or reject, but denies to the plaintiffs-in-error such right to file a plan. [fol. 236] (b) The Act gives the defendants-in-error the right to file the petition which set the Act in operation, but denies such right to the plaintiffs-in-error.

(c) The Act and Order expunges the contractual rights of the plaintiffs-in-error and relieves the defendants-in-error of onerous obligations, both express and implied, but denies compensation of any kind to the plaintiffs-in-error, (except for their royalty reserved in the contracts, which royalty compensation is not adequate or just under the law) and therefore does not operate on all alike.

(d) The Act defines the duties of the Corporation Commission of Oklahoma as to division of oil and gas, and fixing compensation of the parties from whom property is taken in novel, unfamiliar and uncertain terms which have not yet acquired any definiteness or certainty.

(e) The Act singles out a class of property owners and subjects that class to oppressive discrimination, especially in respect to those rights so important as to be protected by constitutional guaranty, to-wit: (1) impairment of their contractual rights, (2) taking of their property without just compensation, (3) equal proceedual rights of setting the Act in operation and filing a "Plan" of division and compensation.

(f) The Act gives the majority lessees the right to divide the oil and gas and fix the compensation for the wells, machinery, installations and structures taken by them, which is entirely unnecessary and unreasonable to effectuate unit operation of the common source of supply and which constitutes an unreasonable and unwarranted delegation of legislative and judicial authority.

[fol. 237] Jim Hatcher, Reford Bond, Jr., Attorneys for Petitioners, Petroleum Building, Chickasha, Oklahoma.

[fol. 238] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

[Title omitted]

PRAECIPE INDICATING PORTIONS OF RECORD TO BE INCLUDED IN TRANSCRIPT—Filed July 30, 1951

To the Clerk of Said Court:

You are hereby requested to prepare the original record, proceedings and papers upon which the decision herein was rendered and to include therein the following, to-wit:

1. The Opinion of this Court
2. The Case-Made filed in this court
3. Petition for appeal to the Supreme Court of the United States.
4. Assignment of Errors filed by defendents herein.
5. Order Allowing Appeal and Fixing Amount of Bond.
6. Citation on appeal signed by the Chief Justice of the Supreme Court of the State of Oklahoma.
7. Bond for Cost of Appeal and Approval thereof by the Chief Justice of the Supreme Court of the State of Oklahoma.
8. This Praecipe with Acknowledgement of Service and Waiver of Counter Praecipe.

[fols. 239-241] Said transcript is to be prepared as required by law and the rules of this Court and of the Su-

preme Court of the United States and is to be filed in the office of the Clerk of the Supreme Court of the United States on or before the 8th day of September, 1951.

Jim Hatcher, Reford Bond, Jr., Attorneys for Petitioners, Kit C. Farwell, et al., 406 Petroleum Building, Chickasha, Oklahoma.

[fol. 242] Clerk's Certificate to foregoing transcript omitted in printing.

[fol. 243] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

[Title omitted]

PETITION IN ERROR OF PALMER OIL CORP.—Filed October 18, 1947

Comes now, The Palmer Oil Corporation (hereinafter called plaintiff in error), a corporation duly organized and existing under and by virtue of the Laws of the State of Kansas, and duly licensed to do business within the State of Oklahoma, and states and shows to the Court as follows:

That on the 5th day of September, 1947, the Corporation Commission of the State of Oklahoma, defendant in error, entered its Order No. 20289, Cause CD 1308, entitled "In the Matter of the Petition for the Creation of the West Cement Medrano Unit having for its purpose the unitized management, operation and further development of the West Cement Medrano common source of supply in Caddo County, Oklahoma, the defining of the Unit Area thereof and the prescribing of the Plan of Unitization applicable to such Unit and Unit Area," in favor of the Applicants (hereinafter referred to as defendants in error), Amerada Petroleum Corporation, Anderson-Prichard Oil Corporation, Phillips Petroleum Company, Ray Stephens, Inc. and Gulf Oil Corporation, and the protest of this plaintiff in error was denied.

That within the time allowed by law, this plaintiff in error gave notice of appeal to this Court from said decision and Order of the said Corporation Commission, which appeal was allowed by the Corporation Commission of Oklahoma on said date of September 5, 1947. That the complete transcript of the record in said cause, duly cer-
[fol. 244] tified to by the Corporation Commission of the State of Oklahoma, and filed as prescribed by law, is filed herein and by reference made a part of this petition in error.

Said plaintiff in error alleges that there is error in said record, decision, order, judgment and proceedings of the Corporation Commission of the State of Oklahoma, and in the plan of compulsory unitization approved by it by such order, in this, to-wit:

1. The Statutes of Oklahoma, Title 52, Sections 286.01 to 286.17, Oklahoma Statutes Annotated (H. B. 339 of the 1945 Legislature,) upon which said Commission based its authority to make its order and judgment, are invalid, illegal and of no force and effect for the following reasons:

(a) That said statutes are in violation of the due process of law clause contained in the Fourteenth Amendment to the Constitution of the United States and Section 7, Article II of the Constitution of the State of Oklahoma.

(b) That said statutes deny to this plaintiff in error equal protection of the Laws guaranteed by the Fourteenth Amendment to the Constitution of the United States.

(c) That said statutes constitute a taking of the property of this plaintiff in error in violation of and contrary to Sections 23 and 24 of Article II of the Constitution of the State of Oklahoma.

(d) That said statutes impair the obligation of the contract between this plaintiff in error and the lessors of its oil and gas mining lease in violation of Section 10, Article I of the Constitution of the United States, and Section 15, Article II of the Constitution of the State of Oklahoma, and

(e) That said statutes authorize and permit and the

order and judgment of the Commission constitutes [fol. 245] an unlawful delegation of power in violation of Section 1, Article IV and Article V of the Constitution of the State of Oklahoma,

the protection of all of such Constitutional provisions plaintiff in error asserts and claims.

2. The Statutes of Oklahoma, Title 52, Sections 286.01 to 286.17, Oklahoma Statutes Annotated (House Bill 339 of the 1945 Legislature) as applied by said Commission in the approval of the plan of compulsory unitization approved by it by order herein, are invalid, illegal and of no force and effect for the following reasons:

(a) That said statutes, as applied by the Commission in the approval of said plan of compulsory unitization, are in violation of the due process of law clause contained in the Fourteenth Amendment to the Constitution of the United States and Section 7, Article II of the Constitution of the State of Oklahoma.

(b) That said statutes, as applied by the Commission in the approval of said plan of compulsory unitization, deny to this plaintiff in error equal protection of the Laws guaranteed by the Fourteenth Amendment to the Constitution of the United States.

(c) That said statutes, as applied by the Commission in the approval of said plan of compulsory unitization, constitute a taking of the property of this plaintiff in error in violation of and contrary to Sections 23 and 24 of Article II of the Constitution of the State of Oklahoma.

(d) That said statutes, as applied by the Commission in the approval of said plan of compulsory uniti- [fol. 246] zation, impair the obligation of the contract between this plaintiff in error and the lessors of its oil and gas mining lease, in violation of Section 10, Article I of the Constitution of the United States, and Section 15, Article II of the Constitution of the State of Oklahoma, and

(e) That said statutes, as applied by the Commission in the approval of the plan of compulsory uniti-

zation, authorize and permit and the order and judgment of the Commission constitutes an unlawful delegation of power in violation of Section 1, Article IV and Article V of the Constitution of the State of Oklahoma,

the protection of all of such Constitutional provisions plaintiff in error asserts and claims.

3. The said Commission erred in rendering judgment against plaintiff in error and in favor of defendants in error in that said Commission exceeded the authority granted to it by the Constitution and the Laws of the State of Oklahoma in the following particulars, to-wit:

(a) The judgment and order of the Commission and the plan of compulsory unitization approved by it by said Order, violates the limitations placed on said Commission by Title 52, Section 286.05 Oklahoma Statutes Annotated, in that said judgment, order and plan includes within the unitized area portions of a purported common source of supply which have not been reasonably defined by actual drilling operations.

(b) The judgment and order of the Commission and the plan of compulsory unitization approved by it by [fol. 247] said order, violates the limitations placed on said Commission by Title 52, Section 286.03 Oklahoma Statutes Annotated in that the plan of compulsory unit operation approved therein (1) is not feasible, or (2) will not prevent waste, or (3) will not result in the increased recovery of more oil and gas than would otherwise be recovered, or (4) is not for the common good of all interested parties, or (5) decreases the time in which all recoverable oil or gas will be recovered assuming lease operators comply with their implied covenants under existing oil and gas lease to properly develop their respective premises.

(c) That the judgment and order of the Commission and the plan of compulsory unitization approved by it by said order, violates the limitations placed on said Commission by Title 56, Section 286.05, Oklahoma Statutes Annotated, in that the judgment of the Com-

mission and plan in allocating to each tract included in the compulsory unitized area its proportionate share of the oil and gas produced from the purported common source of supply, fail to consider the probable productivity of oil and gas in the absence of unit operations in the unitized area.

(d) That the judgment and order of the Commission and the plan of compulsory unitization approved by it by said order, allocating to each tract in the compulsory unitized area the proportionate share of the oil and gas produced from the purported common source of supply, based said allocations on the conjectured amount of oil or gas underlying the lands at an arbitrary time fixed by the defendants in error [fol. 248] herein, whereas said allocations, if proper, should have been based on the amount of oil and gas underlying the various tracts in the unitized area upon the date of the rendition of said judgment and order approving said plan of compulsory unitization, to-wit: September 5, 1947.

(e) That the judgment and order of the Commission and the plan of compulsory unitization approved by it by said order, allocating the oil and gas to the various tracts included in said compulsory unitized area, does not provide just compensation to the owners of said tracts or leases thereon for the property and property rights of which said judgment, order and plan deprives the owners of said tracts and leases thereon, and is arbitrary and based upon inferences based on other inferences.

(f) That the judgment and order of the Commission and the plan of compulsory unitization approved by it by said order, is contrary to the Rules of Equity in that the defendants in error did not come before the Commission with clean hands for the reason that they had not complied with the terms and conditions, expressed or implied, of their oil and gas leases covering the lands included in said unitized area and the judgment and order of the Commission releases said defendants in error of such obligations.

(g) That the judgment and order of the Commis-

sion and the plan of compulsory unitization approved by it by said order, violates the limitations placed on said Commission by Title 52, Section 286.02 in that [fol. 249] said Commission applies Sections 286.01 to 286.17 to a field where a discovery oil well has been drilled 20 years prior to the effective date of said Statutes.

(h) The judgment and order of the Commission and the plan of compulsory unitization approved by it by said order, violates the limitations placed on said Commission by Title 52, Sections 286.02, 286.04 and 286.05, in that said Commission applies Sections 286.1 to 286.17 to include more than one common source of supply of oil and gas under one compulsory unitized management.

4. The judgment and order of the Commission and the plan of compulsory unitization approved by it by said order, is erroneous and inequitable in allocating the oil and gas as between Gulf Oil Corporation, defendant in error, and The Palmer Oil Corporation, plaintiff in error, with respect to the oil and gas lease on and covering the Southwest Quarter (SW¼) of Section Thirty-five (35), Township Six (6) North, Range Ten (10) West I. M., in Caddo County, Oklahoma, in that it arbitrarily undertook to divide the ownership of the lessee interest in the oil and gas under said tract at a depth of 6000 feet below the surface without making allowance for the ownership of plaintiff in error of the entire thickness or depth of any oil or gas bearing Medrano Sand, the top of which may be encountered at a depth of 6000 feet or above, or the right of plaintiff in error to drain the entire thickness of oil and gas bearing Medrano Sand, the top of which may be encountered at 6000 feet or above.

5. That the unit area, the plan of unitization and the formula used to apportion interests in said unit are inequitable, unfair and unjust as they apply to the legal and equitable rights, title and interests of all parties in interest.

6. The judgment and order of the Commission and the plan of compulsory unitization approved by it by said [fol. 250] order is in error and inequitable in that it makes

no provision for the adjustment or change of the division of interest or formula for the apportionment and allocation of the unit production in the event the results of actual future drilling operations establish that such adjustment or change should be made.

7. That the division of interest of unit production as provided for in said plan of compulsory unitization and as ordered by the Commission is erroneous in that it is not based upon and does not take into consideration, in respect to each separately owned tract, and particularly the separately owned tract upon which this plaintiff in error holds oil and gas leasehold, (a) the quantity of oil and gas recoverable therefrom, (b) the location on structure, (c) the probable productivity of oil and gas in the absence of unit operation, (d) the value of each such tract to the unit, or (e) the different lifting costs per barrel of oil capable of being produced from the respective separate leasehold estates involved.

8. That the application and petition for the creation of the proposed unit and the proposed plan of compulsory unitization were not based upon or supported by facts sufficient to justify or permit the approval of such plan of compulsory unitization as proposed by the defendants in error before the Corporation Commission of Oklahoma.

9. The Commission erred in the trial of said cause in admitting incompetent, irrelevant and immaterial evidence over the objection of plaintiff in error to which it duly excepted.

10. The Commission erred in refusing to set aside its Findings of Fact and Conclusions of Law in its decision of September 5, 1947 upon the motion of plaintiff in error, and to make the several Findings of Fact and Conclusions of Law requested by plaintiff in error.

11. The Commission erred in overruling motion for new trial filed herein by plaintiff in error.

12. The Commission erred in fixing supersedeas bond [fols. 251-252] upon application of plaintiff in error therefor in an exorbitant, unreasonable, prohibitive and arbitrary amount, to-wit: $250,000.00.

Wherefore, plaintiff in error prays that the judgment and Order No. 20289 in Cause CD No. 1308 of the Corpo-

ration Commission of Oklahoma may be reversed, set aside and held for naught, with direction to the Corporation Commission of Oklahoma to set aside and annul said order and judgment, and to enter an order and judgment denying the creation of the West Cement Medrano Unit as prayed for before said Corporation Commission, and that the plaintiff in error have judgment in this Court for all costs laid out and expended by it, and for such other and further relief as to the Court may seem just and proper.

Coleman Hayes, Mark H. Adams, Charles E. Jones,
Attorneys for Plaintiff in Error.

Of Counsel:

Monnet, Hayes & Brown, First National Bldg., Oklahoma City, Oklahoma.

Adams, Jones and Robinson, Brown Building, Wichita 2, Kansas.

[fol. 253] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

[Title omitted]

PETITION IN ERROR OF TOM POTTER—Filed October 18, 1947

The plaintiff in error, Tom Potter, complains of the defendants in error, Amerada Petroleum Corporation, Anderson-Prichard Oil Corporation, Phillips Petroleum Company, Ray Stephens, Inc., Gulf Oil Corporation for that the said defendants in error on the 5th day of September, 1947, before the Corporation Commission of the State of Oklahoma, recovered a judgment by the consideration of said Corporation Commission against the said plaintiff in error in certain proceeding then pending before said Commission wherein the said defendants in error were applicants and the said plaintiff in error was the protestant. The complete transcript of the entire record in said proceeding duly certified by the Chairman of the Corporation Commission *of the Chairman of the Corporation Commission* of the State of Oklahoma and file is hereto attached, marked

Exhibit "A" and made a part of this petition in error; and the said plaintiff in error avers that there is error in the said record and proceedings in this, to-wit:

1. The said Commission erred in rendering judgment for the defendants in error in that the Statutes of Oklahoma, Title 52, Sections 286.01 to 286.17 Oklahoma Statutes Annotated and upon which said Com-ission based its authority to render said judgment, violate the Constitution of the United States of America and particularly violate the following amendments and articles thereof, to-wit:

(a) The Fourteenth Amendment to the United States Constitution, Section 1, in that said statutes attempt to take the property of the plaintiff in error without due process of law and denies to them the equal [fol. 254] protection of the laws.

(b) The Fifth Amendment to the Constitution of the United States in that said statutes seek to to take the property of the plaintiff in error without due process of law and without just compensation.

(c) Article I, Section 10 of the United States Constitution, in that said statutes impair the obligation of the several separate contracts between the Lessor, Plaintiff in error, and the Lessee, defendants in error.

(d) The Fourteenth Amendment to the United States Constitution, Dection 1, prohibiting abridgment of privileges and immunities of citizens of the United States.

2. The said Commission erred in rendering judgment for the defendants in error in that the Statutes of Oklahoma, Title 52, Sections 286.01 to 286.17 Oklahoma Statutes Annotated and upon which said Commission based its authority to render said judgment, violate the Constitution of the State of Oklahoma and particularly violate the following articles, to-wit:

(a) Article 2, Section 7 of the Constitution of Oklahoma, in that said statutes seek to deprive the plaintiff in error of his property without due process of law.

(b) Article 2, Section 15 of the Constitution of the State of Oklahoma in that said statutes impair the

obligation of the contract between the Lessor, plaintiff in error and the Lessee, defendants in error.

(c) Article 5, Section 51 of the Constitution of the State of Oklahoma, in that said law grants to an association, corporation or individual exclusive rights, privileges and immunities within the State of Oklahoma.

(d) Article 2, Sections 23 & 24 of the Constitution of the State of Oklahoma, in that said law seeks to take private property without just compensation and seeks to ascertain said compensation without a board of commissioners of no less than three free-holders, and fails to provide that any party aggrieved by the fixing [fol. 255] of said compensation shall have the right of a trial by jury in a court of record.

3. The said Commission erred in rendering judgment for the defendants in error in that it exceeds the authority granted said Commission by the Constitution and State of Oklahoma in the following particulars, to-wit:

(a) The judgment violates the limitations placed on the Commission by Title 52, Section 286.05 Oklahoma Statutes Annotated in that the Commission attempts to include within the proposed unitized area portions of a common source of supply which have not been reasonably defined by actual drilling operations.

(b) The judgment violates the limitations placed on the Commission by Title 52, Section 286.03 Oklahoma Statutes Annotated in that the "plan of unit operation approved therein is not (1) feasible, or (2) will not prevent waste or (3) will not result in the increased recovery of more oil and gas than would otherwise be recovered", (4) is not for the common good of all interested parties, (5) increases the time within which the oil and gas in the common source of supply would otherwise be produced without thereby conserving oil or gas or preventing waste thereof.

(c) The judgment violates the limitations placed on the Commission by Title 56, Section 286.05 Oklahoma Statutes Annotated in that the judgment of the Commission in allocating to each tract included in the

unitized area its proportionate share of the oil and gas produced from the common source of supply failed to consider the probable productivity of oil and gas in the abscence of unit operations in the unitized area.

(d) That the judgment of the Commission allocating to each tract in the unitized area its proportionate share of the oil and gas produced from the common source of supply based said allocations on the amount of oil and gas underlying the lands at an arbitrary time fixed by the defendants in error whereas said alloca- [fol. 256] tions should have been based on the amount of oil underlying the various tracts in the unitized area upon the date of the rendition of said judgment, to-wit: September 5, 1947.

(e) That the judgment of the Commission allocating the oil and gas to the various tracts included in said unitized area does not provide just compensation to the owners of said tracts for the property and rights of which said judgment deprives the owners of said tracts and is arbitrary and is based on inferences based on other inferences and amounts to a guess.

(f) That the judgment of the Commission is contrary to the rules of equity in that the defendants in error did not come before the Commission with clean hands for the reason that they had not complied with the terms and conditions expressed and implied of their oil and gas leases covering the lands included in said unitized area and that the defendants in error were in default to the plaintiff in error on the obligations of their oil and gas lease contract, and the judgment of the Commission releases them of such obligations without compensation to the plaintiff in error.

(g) That the judgment of the Commission deprives the plaintiff in error of his rights to enforce the implied covenants of his oil and gas lease against the defendants in error without any compensation whatsoever.

(h) The judgment violates the limitations placed on the Commission by Title 52, Section 286.02 in that the Commission attempts to apply Sections 286.01 to

286.17 to a field where the discovery well has been drilled twenty (20) years prior to the effective date of said sections.

(i) The judgment violates the limitations placed on the Commission by Title 52, Sections 286.02, 286.04 & 286.05 in that the Commission attempts to apply Sections 286.01 to 286.17 to include more than one com-
[fols. 257-258] mon source of supply of oil and gas under one unitized management.

4. That the said Commission erred in rendering judgment for the defendants in error approving the plan of the division of the oil and gas among the interested parties and fixing the financial obligations of the interested parties in that said judgment is clearly against the weight of the evidence and is not supported by substantial evidence and discriminates against the plaintiff in error.

Wherefore, plaintiff in error prays that said judgment so rendered may be reversed, set aside and held for naught and that a judgment may be rendered in favor of the plaintiff in error and against the defendants in error and that the plaintiff in error may be restored to all rights that he may have lost by the rendition of such judgment and for such and other relief as to the court may seem just.

Tom Potter, Plaintiff in Error, Hatcher & Bond, By: Reford Bond, Jr., Attorneys, Chickasha, Oklahoma.

[fol. 259] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

[Title omitted]

PETITION IN ERROR OF KIT C. FARWELL ET AL.—Filed October 18, 1947

The plaintiffs in error, Kit C. Farwell, John W. Fletcher, Eva Parker, Frank Pohlemann, Jane A. Jones (Mrs. E. W. Jones), Mabel E. McKirk (Formerly Mabel E. Sherrit),

Amerlia Beemer, Florence M. Plummer, Hazel A. Plummer, Virgie M. Updegrove, Thomas O. Plummer, Otis (I. O.) Oaks, Elizabeth Paine, Chas. T. Williams, Regina Schlitt, Ben P. Butler, Ben P. Holland, T. J. Butler, James A. Holland, Nettie Melton & Fannie McDowell, J. P. McKenna, J. S. Smith, Eva I. Pierson, Ernest S. Pierson, Eva J. Mead, Ella Pierson Price, Clarence M. Pierson, Richard E. Pierson, Minnie E. P. Mooney, L. L. Edwards, T. G. Gann, M. M. Davis, J. F. Ball, Grace E. Niles, J. D. Davis, Lucy E. Davis, Oza Medrano, Lewis L. Edwards, Jasper Edwards, Ted R. Edwards, Josophens Welch, Clinton Edwards, Jessie Mullinax, Opal Coon, R. M. Rowe Estate, by Wayne Rowe, Adm. (Mae M. Rowe, Wanne Rowe & Edith Weidge), Carrie C. Dixon, Offie Lindsey, Grace Maude Lindsey, L. A. Davis & Marie M. Davis, T. B. Walker, Mary A. Farris, L. N. Davis, Winifred M. Prentice, now Graney, Eugene L. Prentice, Maxine Ruth Prentice, John C. Prentice, Ida B. Rivers, Dorothy McClaran, Max E. McClaren, George A. McClaren, Maurice McClaran, separately complain of the defendants in error, Amerada Petroleum Corporation, Anderson-Prichard Oil Corporation, Phillips Petroleum Company, Ray Stephens, Inc., Gulf Oil Corporation for that the said defendants in error on the 5th day of September, 1947, before the Corporation Commission of the State of Oklahoma, recovered a judgment by the con- [fol. 260] sideration of said Corporation Commission against the said plaintiffs in error in certain proceeding then pending before said Commission wherein the said defendants in error were applicants and the said plaintiffs in error were protestants. The complete transcript of the entire record in said proceeding duly certified by the Chairman of the Corporation Commission of the State of Oklahoma and file is hereto attached, marked Exhibit "A" and made a part of this petition in error; and the said plaintiffs in error separately aver that there is error in the said record and proceedings in this, to-wit:

1. The said Commission erred in rendering judgment for the defendants in error in that the Statutes of Oklahoma, Title 52, Sections 286.01 to 286.17 Oklahoma Statutes Annotated and upon which said Commission based its authority to render said judgment, violate the Constitution of the United

States of America and particularly violate the following amendments and articles thereof, to-wit:

(a) The Fourteenth Amendment to the United States Constitution, Section 1, in that said statutes attempt to take the property of the plaintiffs in error without due process of law and denies to them the equal protection of the laws.

(b) The Fifth Amendment to the Constitution of the United States in that said statutes seek to take the property of the plaintiffs in error without due process of law and without just compensation.

(c) Article I, Section 10 of the United States Constitution, in that said statutes impair the obligation of the several separate contracts between the Lessor, plaintiffs in error, and the Lessee, defendants in error.

(d) The Fourteenth Amendment to the United States Constitution, Section 1, prohibiting abridgment of privileges and immunities of citizens of the United States.

2. The said Commission erred in rendering judgment for the defendants in error in that the Statutes of Oklahoma, Title 52, Sections 286.01 to 286.17 Oklahoma Statutes Annotated and upon which said Commission based its authority to render said judgment, violate the Constitution of the State of Oklahoma and particularly violate the following articles, to-wit:

[fol. 261] (a) Article 2, Section 7 of the Constitution of Oklahoma, in that said statutes seek to deprive the plaintiffs in error of their property without due process of law.

(b) Article 2, Section 15 of the Constitution of the State of Oklahoma in that said statutes impair the obligation of the separate contracts between the Lessor, plaintiffs in error and the Lessee, defendants in error.

(c) Article 5, Section 51 of the Constitution of the State of Oklahoma, in that said law grants to an association, corporation or individual exclusive rights, privileges and immunities within the State of Oklahoma.

(d) Article 2, Sections 23 & 24 of the Constitution of the State of Oklahoma, in that said law seeks to take private property without just compensation and seeks to ascertain said compensation without a board of commissioners of no less than three free-holders, and fails to provide that any party aggrieved by the fixing of said compensation shall have the right of a trial by jury in a court of record.

3. The said Commission erred in rendering judgment for the defendants in error in that it exceeds the authority granted said Commission by the Constitution and State of Oklahoma in the following particulars, to-wit:

(a) The judgment violates the limitations placed on the Commission by Title 52, Section 286.05 Oklahoma Statutes Annotated in that the Commission attempts to include within the proposed unitized area portions of a common source of supply which have not been reasonably defined by actual drilling operations.

(b) The judgment violates the limitations placed on the Commission by Title 52, Section 286.03 Oklahoma Statutes Annotated in that the "plan of unit operation approved therein is not (1) feasible, or (2) will not prevent waste or (3) will not result in the increased recovery of more oil and gas than would otherwise be recovered", (4) is not for the common good of all interested parties, (5) increases the time within which the oil and gas in the common source of supply would [fol. 262] otherwise be produced without thereby conserving oil or gas or preventing waste thereof.

(c) The judgment violates the limitations placed on the Commission by Title 56, Section 286.05 Oklahoma Statutes Annotated in that the judgment of the Commission in allocating to each tract included in the unitized area its proportionate share of the oil and gas produced from the common source of supply failed to consider the probable productivity of oil and gas in the abscence of unit operations in the unitized area.

(d) That the judgment of the Commission allocating to each tract in the unitized area its proportionate share of the oil and gas produced from the common

source of supply based said allocations on the amount of oil and gas underlying the lands at an arbitrary time fixed by the defendants in error whereas said allocations should have been based on the amount of oil underlying the various tracts in the unitized area upon the date of the rendition of said judgment, to-wit: September 5, 1947.

(e) That the judgment of the Commission allocating the oil and gas to the various tracts included in said unitized area does not provide just compensation to the owners of said tracts for the property and rights of which said judgment deprives the owners of said tracts and is arbitrary and is based on inferences based on other inferences and amounts to a guess.

(f) That the judgment of the Commission is contrary to the rules of equity in that the defendants in error did not come before the Commission with clean hands for the reason that they had not complied with the terms and conditions expressed and implied of their oil and gas leases covering the lands included in said unitized area and that the defendants in error were in default to the plaintiffs in error on the obliga-
[fol. 263] tions of their oil and gas lease contracts, and the judgment of the Commission releases them of such obligations without compensation to the plaintiffs in error.

(g) That the judgment of the Commission deprives the plaintiffs in error of their rights to enforce the implied covenants of their oil and gas leases against the defendants in error without any compensation whatsoever.

(h) The judgment violates the limitations placed on the Commission by Title 52, Section 286.02 in that the Commission attempts to apply Section 286.01 to 286.17 to a field where the discovery well has been drilled twenty (20) years prior to the effective date of said sections.

(i) The judgment violates the limitations placed on the Commission by Title 52, Sections 286.02, 286.04, & 286.05 in that the Commission attempts to apply Sec-

tions 286.01 to 286.17 to include more than one common source of supply of oil and gas under one unitized management.

Wherefore, plaintiffs in error pray that said judgment so rendered may be reversed, set aside and held for naught and that a judgment may be rendered in favor of the plaintiffs in error separately and against the defendants in error and that the plaintiffs in error be separately restored to all rights that they have lost by the rendition of such judgment and for such and other relief as to the court may seem just.

(Signed) Kit C. Farwell, Frank Pohlemann, Florence M. Plummer, Amerlia Beemer, Thomas O. Plummer, Chas. T. Williams, Ben P. Holland, Nettie Melton & Fannie McDowell, Eva J. Mead, Richard E. Pierson, T. G. Gann, Grace E. Niles, Oza Medrano, John W. Fletcher, Jane A. Jones (Mrs. E. W. Jones), Hazel A. Plummer, Otis (I. O.) Oaks, Regina Schlitt, T. J. Butler, J. P. McKenna, Eva I. Pierson, Ella Pierson Price, Minnie E. P. Mooney, M. M. Davis, J. D. Davis, Lewis L. Edwards, Eva Parker, Mabel E. McKirk (Formerly Mabel E. Sherrit), Virgia M. Updegrove, Elizabeth Paine, Ben P. Butler, James A. Holland, J. S. Smith, Ernest S. Pierson, Clarence M. Pierson, L. L. Edwards, J. F. Ball, Lucy E. [fols. 264-265] Davis, Jasper Edwards, Ted R. Edwards, Jessie Mullinax, Carrie C. Dixon, Grace Maude Lindsey, T. B. Walker, Mary A. Farris, Eugene L. Prentice, John C. Prentice, Max E. McClaran, Josophens Welch, Opal Coon, Offie Lindsey, L. A. Davis & Marie M. Davis, L. N. Davis, Maxine Ruth Prentice, Ida B. Rivers, George A. McClaran, Clinton Edwards, R. M. Rowe Estate, by Wayne Rowe, Adm. (Mae Rowe, Wanne Rowe & Edith Weidge), Winifred M. Prentice (now Graney), Dorothy McClaran, Maurice McClaran, Plaintiffs in Error, Hatcher & Bond, By: Reford Bond, Jr., Attorneys, Chickasha, Oklahoma.

[fol. 266] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

[Title omitted]

PETITION IN ERROR OF CLYDE KAHLE ET AL.—Filed October 18, 1947

The plaintiffs in error, Clyde Kahle and Maud Kahle, husband and wife, and Bob White Oil & Gas Company, separately complain of the defendants in error, Amerada Petroleum Corporation, Anderson-Prichard Oil Corporation, Phillips Petroleum Company, Ray Stephens, Inc., Gulf Oil Corporation for that the said defendants in error on the 5th day of September, 1947, before the Corporation Commission of the State of Oklahoma, recovered a judgment by the consideration of said Corporation Commission against the said plaintiffs in error in certain proceeding then pending before said Commission wherein the said defendants in error were applicants and the said plaintiffs in error were protestants. The complete transcript of the entire record in said proceeding duly certified by the Chairman of the Corporation Commission of the State of Oklahoma and file is hereto attached, marked Exhibit "A" and made a part of this petition in error; and the said plaintiffs in error separately aver that there is error in the said record and proceedings in this, to-wit:

1. The said Commission erred in rendering judgment for the defendants in error in that the Statutes of Oklahoma, Title 52, Sections 286.01 to 286.17 Oklahoma Statutes Annotated and upon which said Com-ission based its authority to render said judgment, violate the Constitution of the United States of America and particularly violate the following amendments and articles thereof, to-wit:

(a) The Fourteenth Amendment to the United States Constitution, Section 1, in that said statutes attempt to take the property of the plaintiffs in error without due process of law and denies to them the equal [fol. 267] protection of the laws.

(b) The Fifth Amendment to the Constitution of

the United States in that said statutes seek to take the property of the plaintiffs in error without due process of law and without just compensation.

(c) Article I, Section 10 of the United States Constitution, in that said statutes impair the obligation of the several separate contracts between the Lessor, plaintiffs in error, and the Lessee, defendants in error.

(d) The Fourteenth Amendment to the United States Constitution, Section 1, prohibiting abridgment of privileges and immunities of citizens of the United States.

2. The said Commission erred in rendering judgment for the defendants in error in that the Statutes of Oklahoma, Title 52, Sections 286.01 to 286.17 Oklahoma Statutes Annotated and upon which said Commission based its authority to render said judgment, violate the Constitution of the State of Oklahoma and particularly violate the following articles, to-wit:

(a) Article 2, Section 7 of the Constitution of Oklahoma, in that said statutes seek to deprive the plaintiffs in error of their property without due process of law.

(b) Article 2, Section 15 of the Constitution of the State of Oklahoma in that said statutes impair the obligation of the separate contracts between the Lessor, plaintiffs in error and the Lessee, defendants in error.

(c) Article 5, Section 51 of the Constitution of the State of Oklahoma, in that said law grants to an association, corporation or individual exclusive rights, privileges and immunities within the State of Oklahoma.

(d) Article 2, Sections 23 & 24 of the Constitution of the State of Oklahoma, in that said law seeks to take private property without just compensation and seeks to ascertain said compensation without a board of commissioners of no less than three free-holders, and fails to provide that any party aggrieved by the fixing [fol. 268] of said compensation shall have the right of a trial by jury in a court of record.

3. The said Commission erred in rendering judgment for the defendants in error in that it exceeds the authority granted said Commission by the Constitution and State of Oklahoma in the following particulars, to-wit:

(a) The judgment violates the limitations placed on the Commission by Title 52, Section 286.05 Oklahoma Statutes Annotated in that the Commission attempts to include within the proposed unitized area portions of a common source of supply which have not been reasonably defined by actual drilling operations.

(b) The judgment violates the limitations placed on the Commission by Title 52, Section 286.03 Oklahoma Statutes Annotated in that the "plan of unit operation approved therein is not (1) feasible, or (2) will not prevent waste or (3) will not result in the increased recovery of more oil and gas than would otherwise be recovered", (4) is not for the common good of all interested parties, (5) increases the time within which the oil and gas in the common source of supply would otherwise be produced without thereby conserving oil or gas or preventing waste thereof.

(c) The judgment violates the limitations placed on the Commission by Title 56, Section 286.05 Oklahoma Statutes Annotated in that the judgment of the Commission in allocating to each tract included in the unitized area its proportionate share of the oil and gas produced from the common source of supply failed to consider the probable productivity of oil and gas in the absence of unit operations in the unitized area.

(d) That the judgment of the Commission allocating to each tract in the unitized area its proportionate share of the oil and gas produced from the common source of supply based said allocations on the amount of oil and gas underlying the lands at an arbitrary time fixed by the defendants in error whereas said [fol. 269] allocations should have been based on the amount of oil underlying the various tracts in the unitized area upon the date of the rendition of said judgment, to-wit: September 5, 1947.

(e) That the judgment of the Commission allocating

the oil and gas to the various tracts included in said unitized area does not provide just compensation to the owners of said tracts for the property and rights of which said judgment deprives the owners of said tracts and is arbitrary and is based on inferences based on other inferences and amounts to a guess.

(f) That the judgment of the Commission is contrary to the rules of equity in that the defendants in error did not come before the Commission with clean hands for the reason that they had not complied with the terms and conditions expressed and implied of their oil and gas leases covering the lands included in said unitized area and that the defendants in error were in default to the plaintiffs in error on the obligations of their oil and gas lease contracts, and the judgment of the Commission releases them of such obligations without compensation to the plaintiffs in error.

(g) That the judgment of the Commission deprives the plaintiffs in error of their rights to enforce the implied covenants of their oil and gas leases against the defendants in error without any compensation whatsoever.

(h) The judgment violates the limitations placed on the Commission by Title 52, Section 286.02 in that the Commission attempts to apply Section 286.01 to 286.17 to a field where the discovery well has been drill- twenty (20) years prior to the effective date of said sections.

(i) The judgment violates the limitations placed on the Commission by Title 52, Sections 286.02, 286.04 & 286.05 in that the Commission attempts to apply Sections 286.01 to 286.17 to include more than one [fols. 270-271] common source of supply of oil and gas under one unitized management.

4. The said Commission erred in rendering judgment for the defendants in error in that the judgment of the Commission granted the unit created thereby a first and prior lien upon the overriding royalty interest of the plaintiffs in error to secure the payment of the amount of unit expense charged to and assessed against the tract

in which these plaintiffs in error own their overriding royalty interest which is in direct violation of the contract between the plaintiffs in error and the defendant in error, Lessee, Ray Stephens, Inc., and that the provisions of Section 286.09, Title 52, Oklahoma Statutes Annotated which authorizes the fixing of the lien as fixed by the said judgment violates Article I, Section 10 of the United States Constitution and Article 2, Section 15 of the Constitution of the State of Oklahoma and the Fifth Amendment to the Constitution of the United States and Article 2, Sections 23 & 24 of the Constitution of the State of Oklahoma.

Wherefore, plaintiffs in error pray that said judgment so rendered may be reversed, set aside and held for naught and that a judgment may be rendered in favor of the plaintiffs in error separately and against the defendants in error and that the plaintiffs in error may be separately restored to all rights that they have lost by the rendition of such judgment and for such and other relief as to the court may seem just.

Clyde Kahle, Maud Kahle, Bob White Oil & Gas Company, Plaintiffs in Error, Hatcher & Bond, By: Reford Bond, Jr., Attorneys, Chickasha, Oklahoma.

[fol. 272] [File endorsement omitted]

IN SUPREME COURT OF OKLAHOMA

[Title omitted]

PETITION IN ERROR OF B. E. JOHNSON ET AL.—Filed October 18, 1947

The plaintiffs in error, B. E. Johnson, Virginia McIntyre and M. L. McIntrye, separately complain of the defendants in error, Amerada Petroleum Corporation, Anderson-Prichard Oil Corporation, Phillips Petroleum Company, Ray Stephans, Inc., Gulf Oil Corporation, for that the said defendants in error on the 5th day of September, 1947, before the Corporation Commission of the State of Oklahoma, recovered a judgment by the consideration of said

Corporation Commission against the plaintiffs in error in a certain proceeding then pending before said commission wherein the said defendants in error were applicants and the said plaintiffs in error were protestants. The complete transcript of the entire record in said proceeding duly certified by the Chairman of the Corporation Commission of the State of Oklahoma and file. is hereto attached, marked Exhibit "A" and made a part of this petition in error; and the said plaintiffs in error separately aver that there is error in the said record and proceeding in this, to-wit:

1. The said Commission erred in rendering judgment for the defendants in error in that the Statutes of Oklahoma, Title 52, Sections 286.01 to 286.17 Oklahoma Statutes Annotated and upon which said Commission based its authority to render said judgment, violated the Constitution of the United States of America and particularly violated the following amendments and articles thereof, to-wit:

A. The fourteenth Amendment to the United States Constitution, Section 1, in that said statutes attempt to take the property of the plaintiffs in error without due process of law and denies to them the equal protection of the laws.

B. The fifth Amendment to the Constitution of the United States in that said statutes seek to take the property of the plaintiffs in error without due process of law and without [fol. 273] just compensation.

C. Article I, Section 10 of the United States Constitution, in that said statutes impair the obligation of the several separate contracts between the Lessor, plaintiffs in error, and the Lessee, defendants in error.

D. The Fourteenth Amendment to the United States Constitution, Section 1, prohibiting abridgment of privileges and immunities of citizens of the United States.

2. The said Commission erred in rendering judgment for the defendants in error in that the Statutes of Oklahoma, Title 52, Sections 286.01 to 286.17 Oklahoma Statutes Annotated and upon which said Commission based its authority to render said judgment, violated the Constitu-

tion of the State of Oklahoma and particularly violated the following articles, to-wit:

A. Article 2, Section 6 of the Constitution of Oklahoma, in that said Statutes seek to deprive the plaintiffs in error of their property without due process of law.

B. Article 2, Section 15 of the Constitution of the State of Oklahoma in that said statutes impair the obligation of the separate contracts between the Lessor, plaintiffs in error and the Lessee, defendants in error.

C. Article 5, Section 51 of the Constitution of the State of Oklahoma, in that said law grants to an association, corporation or individual exclusive rights, privileges and immunities within the State of Oklahoma.

D. Article 2, Section 24 of the Constitution of the State of Oklahoma, in that said law seeks to take private property without just compensation and seeks to ascertain said compensation without a board of commissioners of no less than three free-holders, and fails to provide that any party aggrieved by the fixing of said compensation shall have the right of a trial by jury in a court of record.

3. The said Commission erred in rendering judgment for the defendants in error in that it exceeds the authority granted said Commission by the Constitution and State of Oklahoma in the following particulars, to-wit:

A. The judgment violates the limitations placed on the Commission by Title 52, Section 286.05 Oklahoma Statutes Annotated in that the Commission attempts to include within the proposed unitized area portions of a common source of supply which have not been reasonably defined by actual drilling operations.

[fol. 274] B. The judgment violates the limitations placed on the Commission by Title 52, Section 286.03 Oklahoma Statutes Annotated in that the "plan of unit operation approved therein is not (1) feasible, or (2) will not prevent waste or (3) will not result in the increased recovery of more oil and gas than would otherwise be recovered."

C. The judgment violates the limitations placed on the Commission by Title 56, Section 296.05 Oklahoma Statutes Annotated in that the judgment of the Commission in allo-

cating to each tract included in the unitized area its proportionate share of the oil and gas produced from the common source of supply failed to consider the probable productivity of oil and gas in the absence of unit operations in the unitized area.

D. That the judgment of the Commission allocating to each tract in the unitized area its proportionate share of the oil and gas produced from the common source of supply based said allocations on the amount of oil and gas underlying the lands at an arbitrary time fixed by the defendants in error whereas said allocations should have been based on the amount of oil underlying the various tracts in the unitized area upon the date of the rendition of said judgment, to-wit: September 5, 1947.

E. That the judgment of the Commission allocating the oil and gas to the various tracts included in said unitized area does not provide just compensation to the owners of said tracts for the property and rights of which said judgment deprives the owners of said tracts and is arbitrary and is based on inferences based on other inferences and amount to a guess.

F. That the judgment of the Commission is contrary to the rules of equity in that the defendants in error did not come before the Commission with clean hands for the reason that they had not complied with the terms and conditions expressed and implied of their oil and gas leases covering the lands included in said unitized area and that the defendants in error were in default to the plaintiffs in error on the obligations of their oil and gas lease contracts, and the judgment of the Commission releases them of such obligations and without compensation to the plaintiffs in error.

G. That the judgment of the Commission deprives the plaintiffs in error of their rights to inforce the implied covenants of their oil and gas leases against the defendants in error without any compensation whatsoever.

H. The judgment violates the limitations placed on the Commission by Title 52, Section 286.02 in that the Com- [fols. 275-276] mission attempts to apply Section 286.01 to 286.17 to a field where the discovery well has been drilled twenty (20) years prior to the effective date of said sections.

I. The judgment violates the limitations placed on the Commission by Title 52, Section 286.02, 286.04 & 286.05 in that the Commission attempts to apply Section 286.1 to 286.17 to include more than one common source of supply of oil and gas under one unitized management.

Wherefore, plaintiffs in error pray that said judgment so rendered may be reversed, set aside and held for naught and that a judgment may be rendered in favor of the plaintiffs in error separately and against the defendants in error and that the plaintiffs in error be separately restored to all rights that they have lost by the rendition of such judgment and for such other relief as to the court may seem just.

B. E. Johnson, Virginia McIntyre, M. S. McIntyre, Plaintiffs in error, By Jack W. Page, Attorney for said Plaintiffs in error.

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Vol. II

TRANSCRIPT OF RECORD

(Pages 173 to 820)

Supreme Court of the United States

OCTOBER TERM, 1951

No. 301

THE PALMER OIL CORPORATION, PAUL STERBA AND PAUL STERBA, JR., A MINOR, ETC., APPELLANTS,

vs.

AMERADA PETROLEUM CORPORATION, ET AL.

No. 302

KIT C. FARWELL, FRANK PHOHLEMANN, L. A. DAVIS, ET AL., APPELLANTS,

vs.

AMERADA PETROLEUM CORPORATION, ET AL.

APPEALS FROM THE SUPREME COURT OF THE STATE OF OKLAHOMA

FILED SEPTEMBER 4, 1951

PROBABLE JURISDICTION NOTED JANUARY 14, 1952

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1951

No. 301

THE PALMER OIL CORPORATION, PAUL STERBA AND PAUL STERBA, JR., A MINOR, ETC., APPELLANTS,

vs.

AMERADA PETROLEUM CORPORATION, ET AL.

No. 302

KIT C. FARWELL, FRANK PHOHLEMANN, L. A. DAVIS, ET AL., APPELLANTS,

vs.

AMERADA PETROLEUM CORPORATION, ET AL.

APPEALS FROM THE SUPREME COURT OF THE STATE OF OKLAHOMA

VOL. II

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[fols. 1-4] BEFORE THE CORPORATION COMMISSION
OF THE STATE OF OKLAHOMA

Cause CD No. 1308

Hearing: Nov. 7, 1946.—10 o'clock a.m.

In the Matter of the Petition for the Creation of the West Cement Medrano Unit Having for Its Purpose the Unitized Management, Operation and Further Development of the West Cement Medrano Common Source of Supply of Oil and Gas in Caddo County, Oklahoma: The Defining of the Unit Area Thereof and the Prescribing of the Plan of Utilization Applicable to Such Unit and Unit Area.

Petition—Filed October 22, 1946

Come now the undersigned petitioners and respectfully petition the Corporation Commission of the State of Oklahoma for an order creating the West Cement Medrano Unit, having for its purpose the unitized management, operation and further development of the West Cement Medrano common source of supply of oil and gas in Caddo County, Oklahoma, defining the Unit Area of said Unit and prescribing the Plan of Unitization applicable thereto, all as is authorized and provided for by House Bill 339 of the 1945 Legislature of the State of Oklahoma. In support of said petition petitioners respectfully show to the Commission:

1. That the Medrano, said underlying the land outlined by the hatched line on the map hereto attached marked "Exhibit A", located in Caddo County, Oklahoma and found at an average depth of around 6000 feet, constitutes a single common source of supply of oil and gas which is known and has been designated by this Commission as the West Cement Medrano Pool.

2. That said common source of supply of oil and gas was first discovered in October of 1936 by the drilling and completion of the Magnolia Petroleum Company's Medrano Well No. 6, being a gas well located in the SE/4 of the NE/4 of the SW/4 of Section 36, Township 6 North, Range 10 West, Caddo County, Oklahoma; that since that time,

thirty-six (36) producing oil wells and twenty-one (21) producing gas wells have been drilled and completed therein, all of which are capable of producing substantial quantities of oil or gas or both.

3. That the outer boundaries of said common source of supply of oil and gas as outlined on said "Exhibit A" have been reasonably defined by the drilling operations carried on therein.

4. That petitioners are Lessees of record of 51% or more of the area of said common source of supply of oil and gas.

5. That through the selective production of wells and the conduct of pressure maintenance operations by the return of gas to said common source of supply the gas and gas energy in the reservoir will be better conserved and at least 11,000,000 barrels of oil can and will be recovered which otherwise will remain in the ground unrecovered and unrecoverable by any known economic recovery method; that the unitized management, operation and further development of said common source of supply is necessary in order to effectively carry on said selective production of wells and pressure maintenance operations; that the selective production of wells and pressure maintenance operations as applied to said common source of supply are feasible, will prevent waste and will result in the conservation of gas and gas energy and recovery of substantially more oil from the common source of supply than will or can be otherwise recovered; that the value of additional oil so recovered will far exceed any additional cost of conducting said operations; that the unitized management, operation and further development of said common source of supply, the selective production of said wells and the adoption of pressure maintenance operations by the return of gas to the reservoir is for the common good and will result in the general advantage of the owners of the oil and gas rights in and to said common source of supply.

6. That said common source of supply was not being operated by or under pressure maintenance, repressuring or secondary recovery methods of operation as of the effective date of the aforesaid House Bill 339.

7. That there is attached hereto a recommended Plan of Unitization applicable to the proposed Unit and Unit Area

which petitioners consider to be fair, reasonable and equitable.

Wherefore, petitioners respectfully pray that upon the filing of this petition and after notice and proper hearing as by law provided that the Commission make the necessary findings and enter an order creating the West Cement Medrano Unit, defining the Unit Area of said Unit to include all of the lands outlined by the hatched line on Exhibit A and prescribing the Plan of Unitization applicable thereto, all upon such terms and conditions as may be shown by the evidence to be fair, reasonable and equitable, and which are necessary or proper to protect, safeguard and adjust the respective rights and obligations of the several persons affected, including royalty owners, owners of overriding royalties, oil and gas payments, carried interests, mortgages, lien claimants and others, as well as the Lessees.

Amerada Petroleum Corporation. By Victor C. Mieher, Its Attorneys.

Anderson-Prichard Oil Corporation. By W. H. Brown, Paul G. Darrough, Its Attorneys.

Phillips Petroleum Company. By R. B. F. Hummer, R. M. Williams, Harry D. Turner, Its Attorneys.

Ray Stephens, Inc. By Ray Stephens.

Stephens Petroleum Company. By Ray Stephens.

Magnolia Petroleum Company. By W. R. Wallace, Its Attorney.

(Here follows 1 photolithograph, side folios 5-6)

24

EXHIBIT A TO PETITION

R-10-W.

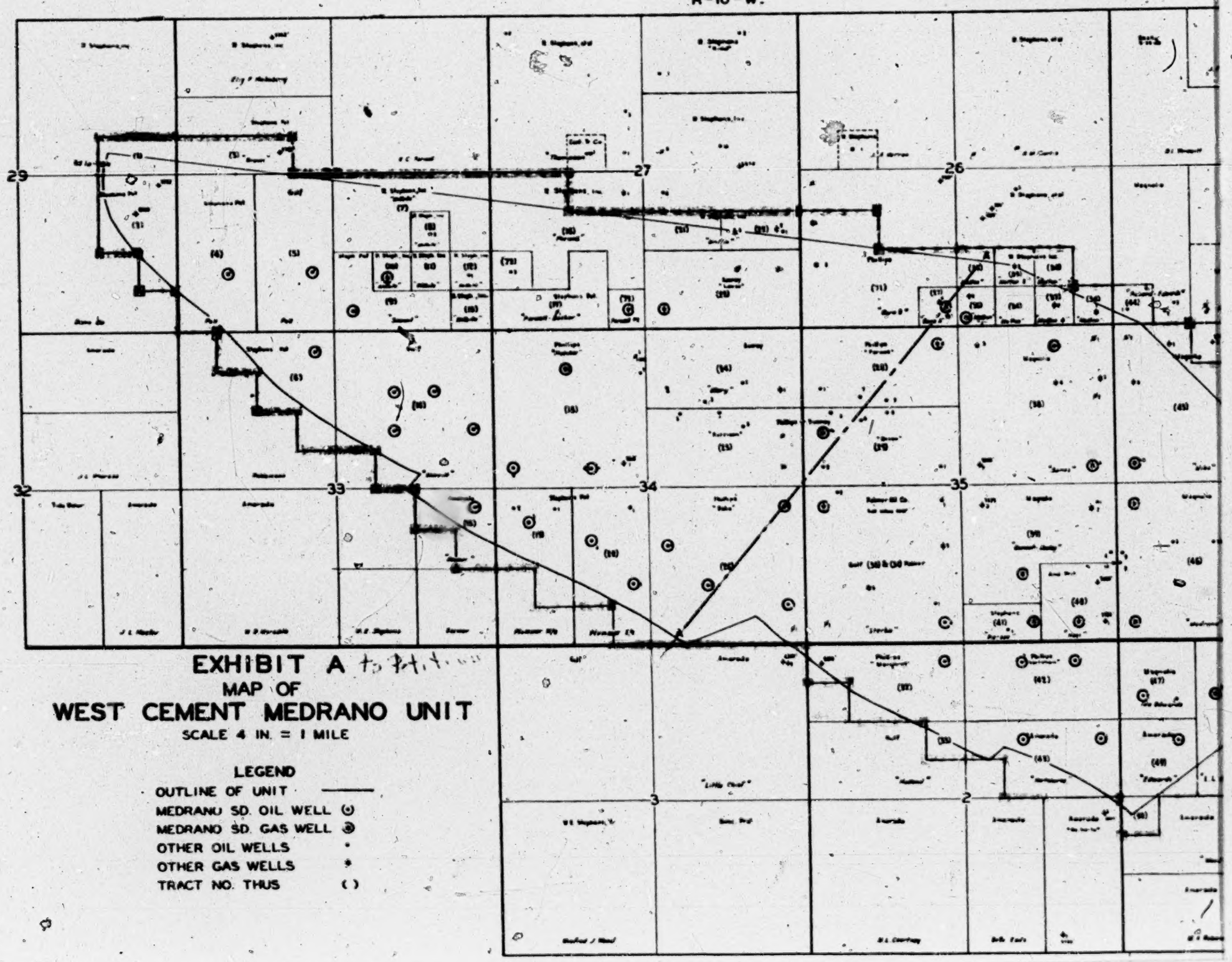


EXHIBIT A to Petition

MAP OF
WEST CEMENT MEDRANO UNIT

SCALE 4 IN. = 1 MILE

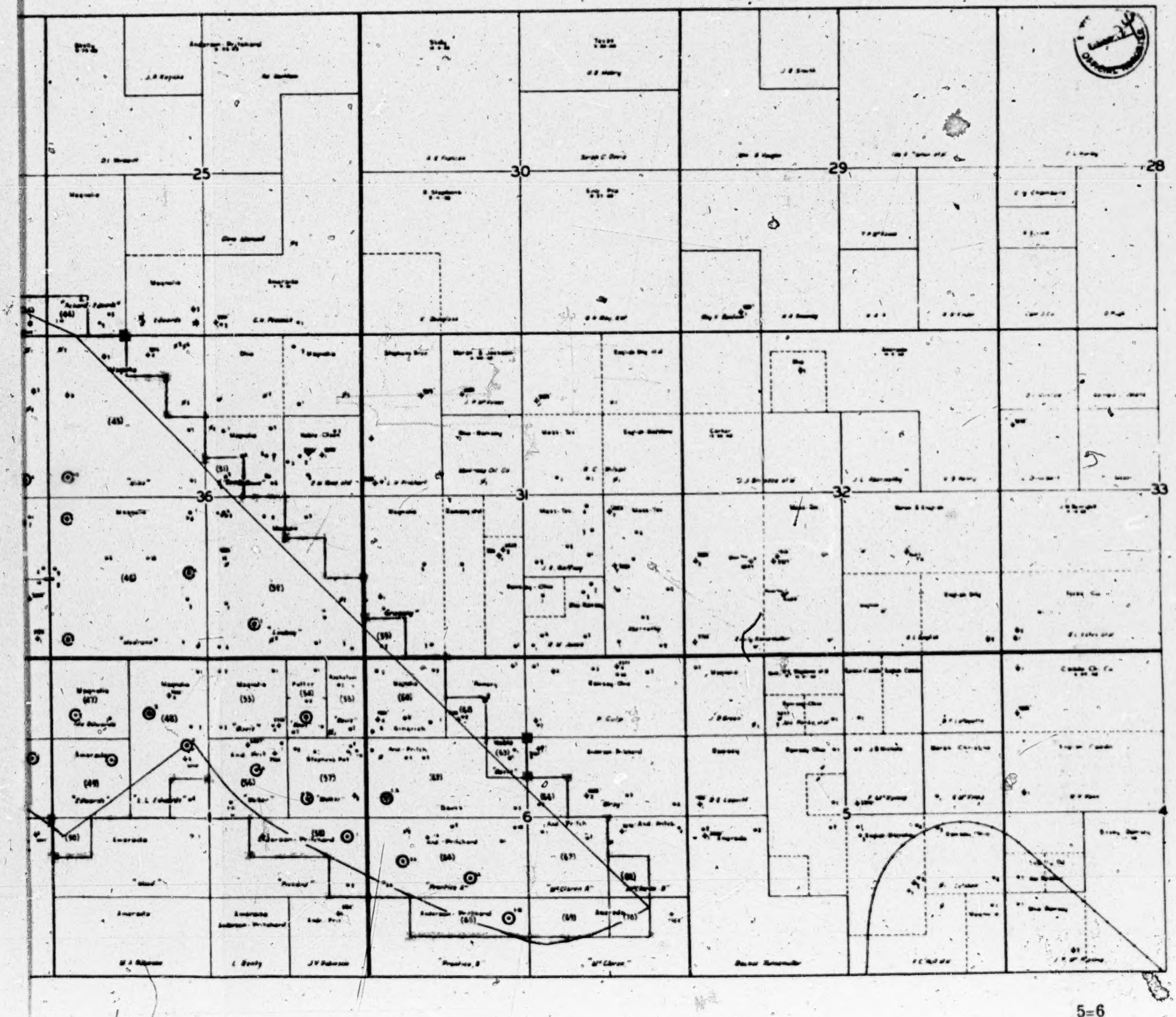
LEGEND

- OUTLINE OF UNIT ——
- MEDRANO SD. OIL WELL ⊙
- MEDRANO SD. GAS WELL ⊛
- OTHER OIL WELLS •
- OTHER GAS WELLS *
- TRACT NO. THUS ( )

ITION

R-9-W.

5=6



5=6

At such time as the Unit Operations are abandoned and the affairs of the Unit wound up, the Unit shall submit for filing a declaration to that effect with the Secretary of the Corporation Commission and with the County Clerk of Caddo County, Oklahoma, whereupon the rights, powers and duties of the Unit shall be at an end.

XXVI.

Amendment to Plan of Unitization and Enlargement of Unit

Any amendment of this Plan of Unitization or any enlargement of the Unit or Unit Area shall be in accordance with the provisions of Sections 11 and 12 of House Bill 339 of the 1945 Legislature of the State of Oklahoma or any amendment thereto.

XXVII.

Subscribers

Provision is made below for the signing of this Plan of Unitization by Lessees within the Unit Area who wish to expressly signify their agreement to the terms, provisions and conditions hereof. Such Lessees may sign either as Unqualified or Qualified Subscribers. Those signing as Unqualified Subscribers agree to all the terms, provisions and conditions hereof, including the agreement to participate in carrying the Lessees who elect to be carried under the provisions of Section XI. Those signing as Qualified Subscribers agree to all the terms, provisions and conditions hereof, except that they reserve the right to be carried in respect to the payment of Unit Expense as is provided in Section XI. and do not agree to participate in carrying the other Lessees who elect to be carried under the terms of said Section. This Plan of Unitization may be so signed by the subscribers hereto at any time, the original of which shall at all times from and after the approval hereof by the Commission remain on file in the office of the Secretary of the Commission. In lieu of signing the original of this Plan of Unitization, any Lessee desiring to

subscribe hereto, either as an Unqualified or Qualified Subscriber, may do so by separate instrument filed with the Secretary of the Commission, all with the same effect as if such Lessees signed the original.

The signing hereof by any Lessee shall be binding upon the heirs, personal representatives, successors and assigns of such Lessees.

The signing hereof by each of the subscribers hereto is conditioned upon the approval of this Plan of Unitization by the Corporation Commission on or before the first day of February, 1947.

[fol. 6b]

Exhibit "B"

Part I—To Plan of Unitization

Tract Number	Lease Name	Legal Description	Sec.	Twp.	Range	Operator	Percentage of Interest in Unit
1	Odla-Tahle	S/2 SE NE	29	6N	10W	Ray Stephens, Inc.	0.180%
2	Dome-Bo	NE SE & NE SE SE	29	6N	10W	Stephens Petroleum Co.	0.775
3	Brown	S/2 SW NW & SW SE NW	28	6N	10W	Stephens Petroleum Co.	0.078
4	Pell	W/2 SW	28	6N	10W	Stephens Petroleum Co.	3.454
5	Pell	E/2 SW	28	6N	10W	Gulf Oil Corp.	2.662
6	Pohleman	NE NW & NE SE NW & NE NW NW	33	6N	10W	Stephens Petroleum Co.	1.972
7	Wilhite	N/2 SE less SW NE SE	28	6N	10W	Ray Stephens, Inc.	0.082
8	Wilhite	SW NE SE	28	6N	10W	Ray Stephens, Inc.	0.011
9	Samwill	W/2 SW SE & SE SW SE & SW SE SE	28	6N	10W	Stephens Petroleum Co.	1.213
10	Wilhite	NE SW SE	28	6N	10W	Ray Stephens, Inc.	0.041
11	Wilhite	NW SE SE	28	6N	10W	Ray Stephens, Inc.	0.015
12	Wilhite	NE SE SE	28	6N	10W	Ray Stephens, Inc.	0.017
13	Wilhite	SE SE SE	28	6N	10W	Ray Stephens, Inc.	0.027
14	Sherritt	NE/4 less SW SW NE	33	6N	10W	Gulf Oil Corp.	13.094
15	Beemer	NE SE less SW NE SE	33	6N	10W	Amerada Petroleum Co.	1.114
16	Farwell	NW SW & NE SW SW & S/2 NE SW & NE SE SW	27	6N	10W	Ray Stephens, Inc.	0.080
17	Farwell-Becker	S/2 SW SW & W/2 SE SW	27	6N	10W	Stephens Petroleum Co.	0.113
18	Fletcher	NW/4	34	6N	10W	Phillips Petroleum Co.	5.374
19	Plummer—W/2	NW SW & NE SW SW	34	6N	10W	Stephens Petroleum Co.	4.078
20	Plummer—E/2	E/2 SW less SW SE SW	34	6N	10W	Stephens Petroleum Co.	6.848
21	Griffin	S/2 NW SE	27	6N	10W	Ray Stephens, Inc.	0.008
22	Griffin	S/2 NE SE	27	6N	10W	Ray Stephens, Inc.	0.002
23	Loose	S/2 SE	27	6N	10W	Sunray Oil Corp.	0.319
24	Ulrey	N/2 NE	34	6N	10W	Sunray Oil Corp.	0.438
25	Garrison	S/2 NE	34	6N	10W	Sunray Oil Corp.	0.311

[fol. 6c]

EXHIBIT "B"

Part I—To Plan of Unitization

Tract Number	Lease Name	Legal Description	Sec.	Twp.	Range	Operator	Percentage of Interest in Unit
26	Oaks	SE/4	34	6N	10W	Phillips Petroleum Co.	11.181
27	Garn "A"	SE SE SW	26	6N	10W	Phillips Petroleum Co.	0.023
28	Farwell	N/2 NW	35	6N	10W	Phillips Petroleum Co.	0.188
29	Dixon	S/2 NW	35	6N	10W	Sunray Oil Corp.	0.533
30	Sterba (Below 6000')	SW/4	35	6N	10W	Gulf Oil Corp.	2.538
31	Sterba (Above 6000')	SW/4	35	6N	10W	Palmer Oil Corp.	5.145
32	Margaret	N/2 NW less SW NW, NW	2	5N	10W	Phillips Petroleum Co.	3.957
33	Holland	NE SE NW	2	5N	10W	Gulf Oil Corp.	0.057
34	Melton	NW SW SE & SE SW SE & NW SE SE & SE SE SE	26	6N	10W	Ray Stephens, Inc.	0.026
35	Melton No. 2	NE SW SE	26	6N	10W	Ray Stephens, Inc.	0.001
36	Melton No. 1	SW SW SE	26	6N	10W	Ray Stephens, Inc.	0.012
37	Melton No. 4	SW SE SE	26	6N	10W	Ray Stephens, Inc.	0.017
38	Sames	NE/4	35	6N	10W	Magnolia Petroleum Co.	0.581
39	Cement-Henley	N/2 SE & N/2 SW SE	35	6N	10W	Magnolia Petroleum Co.	1.592
40	Hays	SE SE	35	6N	10W	Anderson-Prichard Oil Corp.	0.588
41	Pierson	S/2 SW SE	35	6N	10W	Stephens Petroleum Co.	1.476
42	Hartshorn	N/2 NE	2	5N	10W	Phillips Petroleum Co.	8.205
43	Hartshorn	S/2 NE less SW SW NE	2	5N	10W	Amerada Petroleum Corp.	4.022
44	Pickard Edwards	SW SW SW	25	6N	10W	Magnolia Petroleum Co.	0.004
45	Niles	NW NW & S/2 NW & SW NE NW	36	6N	10W	Magnolia Petroleum Co.	0.372
46	Medrano	SW/4	36	6N	10W	Magnolia Petroleum Co.	0.609
47	I. Edwards	NW NW	1	5N	10W	Magnolia Petroleum Co.	2.379
48	L. L. Edwards	E/2 NW	1	5N	10W	Magnolia Petroleum Co.	1.836
49	Edwards	SW NW	1	5N	10W	Amerada Petroleum Co.	3.540
50	Wood	NW NW SW	1	5N	10W	Amerada Petroleum Co.	0.170
51	Caddo-Rowe	SW SW NE	36	6N	10W	Magnolia Petroleum Co.	0.005
52	Lindsay	S/2 SE & NW SE & SW NE SE	36	6N	10W	Magnolia Petroleum Co.	0.319
53	Davis	NW NE	1	5N	10W	Magnolia Petroleum Co.	0.342

54	Davis	W/2 NE NE	1	5N	10W	Potter	0.066
55	Davis	E/2 NE NE	1	5N	10W	F. L. Rookstool	0.030
[fol. 6d]							
56	Walker	SW NE	1	5N	10W	Anderson-Prichard Oil Corp.	1.577
57	Walker	SE NE	1	5N	10W	Stephens Petroleum Co.	1.191
58	Pickard	N/2 NE SE & SE NE SE & NE NW SE	1	5N	10W	Anderson-Prichard Oil Corp.	1.105
59	Gregory	SW SW SW	31	6N	9W	Magnolia Petroleum Co.	0.003
60	Gingrich	NW NW	6	5N	9W	Magnolia Petroleum Co.	0.029
61	Gingrich	SW NE NW	6	5N	9W	Ramsey Petroleum Corp.	0.002
62	Davis	SW NW & S/2 SE NW & NW SE NW	6	5N	9W	Anderson-Prichard Oil Corp.	0.402
63	Davis	NE SE NW	6	5N	9W	Lloyd Noble	0.001
64	Prentice "A"	N/2 SW	6	5N	9W	Anderson-Prichard Oil Corp.	2.741
65	Prentice "B"	N/2 SE SW & NE SW SW	6	5N	9W	Anderson-Prichard Oil Corp.	0.408
66	Wray	SW SW NE	6	5N	9W	Anderson-Prichard Oil Corp.	0.001
67	McClaren "A"	NW SE	6	5N	9W	Anderson-Prichard Oil Corp.	0.066
68	McClaren "B"	SW NE SE	6	5N	9W	Anderson-Prichard Oil Corp.	0.014
69	McClaren	N/2 SW SE	6	5N	9W	Amerada Petroleum Co.	0.129
70	McClaren	NW SE SE	6	5N	9W	Amerada Petroleum Co.	0.026
71	Garn "B"	S/2 NW SW & SW SW & W/2 SE SW & NE SE SW	26	6N	10W	Phillips Petroleum Co.	0.041
72	Farwell #2	SE SE SW & NW SW SW	27	6N	10W	Ray Stephens, Inc.	0.144
TOTAL							100.000%

NOTE: All leases are subject to the adjustment outlined in Exhibit "B"—Part II.

[fol. 6e] EXHIBIT "D" TO PLAN OF UNITIZATION

Operator, Lease and Well	Tract Number	Assigned Value of Well
Amerada Petroleum Corporation		
Beer er #1	15	$59,038
Edwards #1	49	53,899
Hartshorn #1	43	57,995
Hartshorn #2	43	58,986
Anderson-Prichard Oil Corporation		
Davis #1-A	62	20,483
Hays #1	40	20,387
Pickard #1	58	51,198
Prentice "A" #3	64	52,240
Prentice "A" #4	64	50,924
Prentice "B" #1	65	53,686
Walker #2	56	52,168
Gulf Oil Corporation		
Pell #1	5	50,125
Sherritt #1	14	55,586
Sherritt #2	14	52,920
Sherritt #3	14	52,929
Sherritt #4	14	59,073
Magnolia Petroleum Company		
I. Edwards #2	47	54,085
L. L. Edwards #5	48	20,955
L. L. Edwards #7	48	20,869
Cement-Henley #5	39	20,185
Lindsay #12	52	17,323
Medrano #6	46	16,632
Medrano #7	46	14,993
Medrano #11	46	19,458
Niles #10	45	13,826
Sames #6	38	14,022
Sames #8	38	13,666
Palmer Oil Corporation		
Sterba #3	31	17,730
Sterba #4	31	55,064
Phillips Petroleum Company		
Farwell #4	28	14,494
Fletcher #5	18	17,968
Fletcher #6	18	54,832
Fletcher #7	18	49,154
Garn "A" #5	27	14,188
Hartshorn #1	42	51,693
[fols. 6f-7]		
Hartshorn #2	42	54,989
Margaret #1	32	56,908
Oaks #1	26	18,186
Oaks #2	26	53,835
Oaks #3	26	55,329
Oaks #4	26	53,771
Potter		
Davis #1	54	19,032
Ray Stephens, Inc.		
Melton 1, #1	36	14,319
Wilhite #3	10	19,116
Farwell #2	16	15,812

EXHIBIT "D" TO PLAN OF UNITIZATION

Operator, Lease and Well	Tract Number	Assigned Value of Well
Stephens Petroleum Company		
Pierson #1	41	21,797
Plummer W/2, #3	19	57,669
Plummer E/2, #4	20	56,107
Plummer E/2, #5	20	57,663
Pohleman #1	6	56,837
Samwill #1	9	50,090
Pell #1	4	56,625
Walker #1	57	57,834
Sunray Oil Corporation		
Dixon #1-A	29	16,376
Loose #3	23	15,376
Total		$2,110,445

[fol. 8] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title omitted]

ORDER SETTING CAUSE FOR HEARING—Filed October 24, 1946

Now on this the 23rd day of October, 1946, the Corporation Commission of Oklahoma being in Executive Session, there comes on for discussion the above styled and numbered application.

It appears that this is a matter of public interest and should be heard as expeditiously as possible and that November 7th 1946, at 10:00 o'clock a.m., is an open date on the calendar when same might be heard.

It further appears that this is a matter of interest to persons, firms and corporations domiciled in Caddo County, Oklahoma and that notice by publication should be given in that county in some paper of general circulation, in addition to the statutory notice that should be published in Oklahoma County.

ORDER

It is therefore ordered that this cause be and the same is hereby set for hearing at 10 o'clock a.m., on November 7th, 1946 in the Commission's Court Room, Capitol Office Build-
[fols. 9-10] ing, Oklahoma City, Oklahoma.

It is further ordered that notice of the hearing be pub-

lished in one issue of the Anadarko Daily News at Anadarko, Oklahoma, and that notice also be published in one issue of the Daily Law Journal of Oklahoma City, Oklahoma; that said notices be published at least 10 days prior to the date of the hearing.

Done and performed this the 23rd day of October, 1946. Corporation Commission of Oklahoma. /S/ Reford Bond, Chairman; /S/ Ray O. Weems, Vice-Chairman; /S/ W. J. Armstrong, Commissioner. (Seal)

Attest: Tom McMurray, Secretary.

[File endorsement omitted.]

[fol. 11] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title omitted]

NOTICE OF HEARING—Filed October 24, 1946

The State of Oklahoma to all persons, firms, corporations, partnerships, trusts, trustees, guardians, executors, administrators, fiduciaries of every kind, the State of Oklahoma and all agencies and subdivisions thereof and all other beings or entities owning oil and gas rights or otherwise interested in the common source of supply of oil and gas known as the West Cement Medrano Pool underlying the hereinafter described lands located in Caddo County, Oklahoma, or in the production, handling or marketing of the oil and gas that may be located therein or produced therefrom, or having the right to share and participate, either directly or indirectly, in the benefits of such production:

Notice is hereby given that Amerada Petroleum Corporation et al, Lessees of record of more than 51% of the area of the aforesaid common source of supply of oil and [fol. 12] gas, did on the 23rd day of October, 1946, file a petition with the Corporation Commission of the State of Oklahoma for an order creating the West Cement Medrano Unit, having for its purpose the unitized management, operation and further development of said common source of supply, defining the Unit Area of said Unit and prescribing the Plan of Unitization applicable thereto, all as is authorized and provided for by House Bill 339 of the

1945 Legislature of the State of Oklahoma, being 52O. S. Supp. 1945, Sections 286.1 to 286.17.

That the lands sought to be included within the Unit Area of said Unit lie wholly within the following described sections of land located in Caddo County, Oklahoma, to-wit:

Section Six (6), Township Five (5) North, Range Nine (9) West of the I. M.

Section Thirty-one (31), Township Six (6) North, Range Nine (9) West of the I. M.

Sections One (1) and Two (2), Township Five (5) North, Range Ten (10) West of the I. M.

Sections Twenty-five (25) to Twenty-nine (20), inclusive, and Sections Thirty-three (33) to Thirty-six (36), inclusive, in Township Six (6) North, Range Ten (10) West of the I. M.

[fols. 13-14] That said petition has been set for hearing before the Corporation Commission at its court room in the State Capitol office building at Oklahoma City, Oklahoma, at 10 o'clock A.M. on the 7th day of November, 1946.

That all those to whom this notice is addressed and any and all other persons who claim that they will be affected either by the granting or denial of said petition shall have the right to be present and participate at said hearing and shall be granted the opportunity at said time and place to offer evidence and be heard; (a) in support of or in opposition to the petition so filed; (b) in regard to the exclusion of land from or inclusion of other lands within the Unit Area of the proposed unit; (c) in regard to the Plan of Unitization, in whole or in part, to be applicable to such Unit and Unit Area; and (d) in regard to any other matter or thing pertaining to the creation of such Unit or the unitized management, operation and further development of the aforesaid common source of supply of oil and gas.

Dated this 23rd day of October, 1946.

Corporation Commission of the State of Oklahoma.
By Reford Bond /s/, Chairman; Ray O. Weems /s/, Commissioner; W. J. Armstrong /s/, Commissioner. (Seal)

Tom McMurray /s/, Secretary.

[File endorsement omitted.]

[fol. 15] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

AFFIDAVIT OF PUBLICATION—Filed October 23, 1946

STATE OF OKLAHOMA,
County of Caddo, ss:

Wallace Kidd, being duly sworn, says that he is the Editor of the Anadarko Daily News, a daily newspaper printed in the English language in Caddo County, Oklahoma, having a paid general subscription circulation therein with admission to the United States mails as second class matter and printed and published in the county where delivered to the United States mail and which said newspaper has been continuously and uninterruptedly published in said county during a period of one hundred four (104) weeks consecutively next prior to the first publication of the attached notice; that the said notice was published in said newspaper for two consecutive weeks, was taken therefrom and is hereto attached as published and that the same was published in said newspaper as follows:

1st Insertion—Oct. 24, 1946
2nd Insertion—Oct. 31, 1946

That said Notice was printed in the regular and entire edition of said newspaper during the period and time of publication and in the paper proper and not in any supplement thereof; and that said newspaper comes within all of the prescriptions and requirements of Senate Bill No. 47 passed by the Nineteenth Legislature, effective April 13, 1943, and thereafter.

Publishing Fee, $27.50.

Wallace Kidd (ss), Editor.

[fol. 16] STATE OF OKLAHOMA,
County of Caddo, ss:

Subscribed and sworn to before me this 31st day of October, 1946.

Wanda Evans (ss), Notary Public, Court Clerk, Caddo County. (Seal)

My Commission expires 7-29-1948.

By....., Deputy

(Attached Publication)

(Published in The Anadarko Daily News

October 24, 31, 1946)

Before the Corporation Commission of the State of Oklahoma in the Matter of the Petition for the Creation of the West Cement Medrano Unit Having for Its Purpose the Unitized Management, Operation and Further Development of the West Cement Medrano Common Source of Supply of Oil and Gas in Caddo County, Oklahoma; the Defining of the Unit Area Thereof and the Prescribing of the Plan of Unitization Applic. ble to Such Unit and Unit Area.
C. D. No. 1308

NOTICE

The State of Oklahoma to all persons, firms, corporations, partnerships, trusts, trustees, guardians, executors, administrators, fiduciaries of every kind, the State of Oklahoma and all agencies and subdivisions thereof and all other [fol. 17] beings or entities owning oil and gas rights or otherwise interested in the common source of supply of oil and gas known as the West Cement Medrano Pool underlying the hereinafter described lands located in Caddo County, Oklahoma, or in the production, handling or marketing of the oil and gas that may be located therein or produced therefrom, or having the right to share and par-

ticipate, either directly or indirectly, in the benefits of such production:

Notice is hereby given that Amerada Petroleum Corporation et al., Lessees of record of more than 51% of the area of the aforesaid common source of supply of oil and gas, did on the 23rd day of October, 1946, file a petition with the Corporation Commission of the State of Oklahoma for an order creating the West Cement Medrano Unit, having for its purpose the unitized management, operation and further development of said common source of supply, defining the Unit Area of said Unit and prescribing the Plan of Unitization applicable thereto, all as is authorized and provided for by House Bill 339 of the 1945 Legislature of the State of Oklahoma, being 52 O. S. Supp. 1945, Sections 286.1 to 286.17.

That the lands sought to be included within the Unit Area of said Unit lie wholly within the following described sections of land located in Caddo County, Oklahoma, to wit:

Section Six (6), Township Five (5).

North, Range Nine (9) West of the I. M.

[fol. 18] Section Thirty-one (31), Township Six (6) North, Range Nine (9) West of the I. M.

Sections One (1) and Two (2), Township Five (5) North, Range Ten (10) West of the I. M.

Sections Twenty-five (25) to Twenty-nine (29), inclusive, and Sections Thirty-three (33) to Thirty-six (36), inclusive, in Township Six (6) North, Range Ten (10) West of the I. M.

That said petition has been set for hearing before the Corporation Commission at its court room in the State Capitol Office Building at Oklahoma City, Oklahoma, at 10 o'clock A.M. on the 7th day of November, 1946.

That all those to whom this notice is addressed and any and all other persons who claim that they will be affected either by the granting or denial of said petition shall have the right to be present and participate at said hearing and shall be granted the opportunity at said time and place to offer evidence and be heard; (a) in support of or in opposition to the petition so filed; (b) in regard to the exclusion of land from or inclusion of other lands within the Unit Area of the proposed unit; (c) in regard to the Plan of

Unitization, in whole or in part, to be applicable to such Unit and Unit Area; and (d) in regard to any other matter or thing pertaining to the creation of such Unit or the unitized management, operation and further development [fols. 19-20] of the aforesaid common source of supply of oil and gas.

Dated this 23rd day of October, 1946.

Corporation Commission of the State of Oklahoma.
By Reford Bond, Chairman; Ray O. Weems, Commissioner; Wm. J. Armstrong, Commissioner.

Tom McMurray, Secretary.

[fol. 21] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

AFFIDAVIT OF PUBLICATION—Filed October 24, 1946

STATE OF OKLAHOMA,
Oklahoma County, ss.

Arta Simpson, of lawful age, being duly sworn on oath, deposes and says: That she is the principal clerk of The Daily Law Journal-Record, a newspaper of general circulation in the State of Oklahoma and printed at Oklahoma City, Oklahoma. That the attached notice was published in all regular editions of said newspaper on the following dates:

October 24, 31, 1946

Arta Simpson (ss)

Subscribed and sworn to before me this 31st day of October, 1946.

Kathryn Altmiller (ss), Notary Public. (Seal)

My Commission expires January 18, 1950.

Publisher's Fee $21.00.

[fol. 22] (Attachement to Affidivat of Publication)

(31603)

NOTICE

C. D. No. 1308

Before the Corporation Commission of the State of Oklahoma.

In the Matter of the Petition for the Creation of the West Cement Medrano Unit Having for Its Purpose the Unitized Management, Operation and Further Development of the West Cement Medrano Common Source of Supply of Oil and Gas in Caddo County, Oklahoma; the Defining of the Unit Area Thereof and the Prescribing of the Plan of Unitization Applicable to Such Unit and Unit Area.

The State of Oklahoma to all persons, firms, corporations, partnerships, trusts, trustees, guardians, executors, administrators, fiduciaries of every kind, the State of Oklahoma and all agencies and subdivisions thereof and all other beings or entities owning oil and gas rights or otherwise interested in the common source of supply of oil and gas known as the West Cement Medrano Pool underlying the hereinafter described lands located in Caddo County, Oklahoma, or in the production, handling or marketing of the oil and gas that may be located therein or produced therefrom, or having the right to share and participate, either directly or indirectly, in the benefits of such production:

Notice is hereby given that Amerada Petroleum Corporation et al., Lessees of record of more than 51% of the area of the aforesaid common source of supply of oil and gas, did on the 23rd day of October, 1946, file a petition with the Corporation Commission of the State of Oklahoma for an order creating the West Cement Medrano Unit, [fol. 23] having for its purpose the unitized management, operation and further development of said common source of supply, defining the Unit Area of said Unit and prescribing the Plan of Unitization applicable thereto, all as is authorized and provided for by House Bill 339 of the 1945 Legislature of the State of Oklahoma, being 52 O. S. Supp. 1945, Sections 286.1 to 286.17.

That the lands sought to be included within the Unit Area of said Unit lie wholly within the following described sections of land located in Caddo County, Oklahoma, to-wit:

Section Six (6), Township Five (5) North, Range Nine (9) West of the I. M.

Section Thirty-one (31), Township Six (6) North, Range Nine (9) West of the I. M.

Sections One (1) and Two (2), Township Five (5) North, Range Ten (10) West of the I. M.

Sections Twenty-five (25) to Twenty-nine (29), inclusive, and Sections Thirty-three (33) to Thirty-six (36), inclusive, in Township Six (6) North, Range Ten (10) West of the I. M.

That said petition has been set for hearing before the Corporation Commission at its court room in the State Capitol Office Building at Oklahoma City, Oklahoma, at 10 o'clock A. M. on the 7th day of November, 1946.

That all those to whom this notice is addressed and any [fols. 24-25] and all other persons who claim that they will be affected either by the granting or denial of said petition shall have the right to be present and participate at said hearing and shall be granted the opportunity at said time and place to offer evidence and be heard; (a) in support of or in opposition to the petition so filed; (b) in regard to the exclusion of land from or inclusion of other lands within the Unit Area of the proposed unit; (c) in regard to the Plan of Unitization, in whole or in part, to be applicable to such Unit and Unit Area; and (d) in regard to any other matter or thing pertaining to the creation of such Unit or the unitized management, operation and further development of the aforesaid common source of supply of oil and gas.

Dated this 23rd day of October, 1946.

Corporation Commission of the State of Oklahoma.
By Reford Bond, Chairman; Ray O. Weems, Commissioner; Wm. J. Armstrong, Commissioner.
(Seal)

Attest: Tom McMurray, Secretary.

(Published October 24 and 31, 1946)

[fol. 26] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

AFFIDAVIT OF PUBLICATION—Filed November 7, 1946

STATE OF OKLAHOMA,
County of Caddo, ss:

Wallace Kidd, being duly sworn, says that he is the Editor of the Anadarko Daily News, a daily newspaper printed in the English language in Caddo County, Oklahoma, having a paid general subscription circulation therein with admission to the United States mails as second class matter and printed and published in the county where delivered to the United States mail and which said newspaper has been continuously and uninterruptedly published in said county during a period of one hundred four (104) weeks consecutively next prior to the first publication of the attached notice; that the said notice was published in said newspaper for Two consecutive weeks, was taken therefrom and is hereto attached as published and that the same was published in said newspaper as follows:

1st Insertion, November 14, 1946
2nd Insertion, November 21, 1946

That said Notice was printed in the regular and entire edition of said newspaper during the period and time of publication and in the paper proper and not in any supplement thereof; and that said newspaper comes within all of the prescriptions and requirements of Senate Bill No. 47 passed by the Nineteenth Legislature, effective April 13, 1943, and thereafter.

Publishing Fee, $19.25.

Wallace Kidd (ss), Editor.

[fol. 27] State of Oklahoma, County of Caddo, ss.

Subscribed and sworn to before me this 21st day of Nov. 1946.

Wanda Evans (ss), Notary Public, Court Clerk, Caddo County. (Seal)

My Commission expires 7-29, 1948.

By ....., Deputy

(Attachment to Affidavit of Publication)

(Published in The Anadarko Daily News, November 14, 21, 1946)

Before the Corporation Commission of the State of Oklahoma

In the Matter of the Petition for the Creation of the West Cement Medrano Unit having for its Purpose the Unitized Management, Operation and Further Development of the West Cement Medrano Common Source of Supply of Oil and Gas in Caddo County, Oklahoma, and the Defining of The Unit Area Thereof and the Prescribing of the Plan of Unitization Applicable to Such Unit and Unit Area.

Cause CD No. 1308

NOTICE OF HEARING

The State of Oklahoma to all Persons, Firms, Corporations, Partnerships, Trusts, Trustees, Guardians, Executors, Administrators, Fiduciaries of Every Kind, the State of Oklahoma and All Agencies and subdivisions Thereof and all Other Beings or entities Owning Oil and Gas Rights or otherwise interested in the Common Source of Supply of Oil and Gas known as the West Cement Medrano Pool Underlying the Hereinafter described lands Located in Caddo County, Oklahoma, or in the Production, Handling or Marketing of the Oil and Gas that may be located therein or pro- [fol. 28] duced therefrom, or having the right to share and participate, either directly or indirectly, in the benefits of such production:

Notice Is Hereby Given that Amerada Petroleum Corporation, et al, lessees of record of more than 51% of the Area of the aforesaid common source of supply of oil and gas, did on the 23rd day of October, 1946, file a petition, with the Corporation Commission of the state of Oklahoma, which petition, after having been signed by the Magnolia Petroleum Company, was refiled on this the 7th day of November, 1946, for an order creating the West Cement Medrano Unit, having for its purpose the unitized management, operation and further development of said common source of supply, defining the Unit Area of said Unit and

prescribing the Plan of Unitization applicable thereto, all as is authorized and provided for by House Bill 339 of the 1945 Legislature of the State of Oklahoma, being 52 O.S., Supp. 1945, Sections 286.1 to 286.17.

That the lands sought to be included within the Unit Area of said Unit lie wholly within the following described sections of land located in Caddo County, Oklahoma, to wit:

Section Six (6), Township Five (5) North,
Range Nine (9) West of the I. M.
Section Thirty-one (31) Township Six (6) North,
Range Nine (9) West of the I. M.
Section One (1) and Two (2) Township Five (5)
North, Range Ten (10) West of the I. M.
[fols. 29-30] Sections Twenty-five (25) to Twenty-nine (29), inclusive, and Sections Thirty-three (33) to Thirty-six (36), inclusive, in Township Six (6)
North, Range Ten (10) West of the I. M.

That said petition has been set for hearing before the Corporation Commission at its court room in the State Capitol Office Building at Oklahoma City, Oklahoma, at 10 o'clock A.M. on the 9th day of December, 1946.

That all those to whom this notice is addressed and any and all other persons who claim that they will be affected either by the granting or denial of said petition shall have the right to be present and participate at said hearing and shall be granted the opportunity at said time and place to offer evidence and be heard; (a) in support or opposition to the petition so filed; (b) in regard to the exclusion of land from or inclusion of other lands within the Unit Area of the Proposed unit; (c) in regard to the Plan of Unitization, in whole or in part, to be applicable to such Unit and Unit Area; and (d) in regard to any other matter or thing pertaining to the creation of such Unit or the unitized management, operation and further development of the aforesaid common source of supply of oil and gas.

Dated this 7th day of November, 1946.

Corporation Commission of Oklahoma, Reford Bond, Chairman; Ray O. Weems, Vice-Chairman; Wm. J. Armstrong, Commissioner.

Attest: Tom McMurray, Secretary.

[fol. 31] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

AFFIDAVIT OF PUBLICATION—Filed November 7, 1946

STATE OF OKLAHOMA,
Oklahoma County, ss.

Arta Simpson, of lawful age, being duly sworn on oath, deposes and says: That she is the Principal Clerk of The Daily Law Journal-Record, a newspaper of general circulation in the State of Oklahoma and printed at Oklahoma City, Oklahoma. That the attached notice was published in all regular editions of said newspaper on the following dates:

November 14, 21, 1946

Arta Simpson (ss).

Subscribed and sworn to before me this 21st day of November, 1946.

Kathryn Altmiller (ss), Notary Public. (Seal)

My Commission expires January 18, 1950.

Publisher's Fee $21.00.

(Attachment)

(31831)

NOTICE OF HEARING

Cause CD No. 1308

Before the Corporation Commission of the State of Oklahoma

In the Matter of the Petition for the Creation of the West Cement Medrano Unit having for its Purpose the Unitized Management, Operation and Further Development of the West Cement Medrano Common Source of Supply of Oil and Gas in Caddo County, Oklahoma, the Defining [fol. 32] of the Unit Area Thereof and the Prescribing of the Plan of Unitization Applicable to Such Unit and Unit Area.

The State of Oklahoma to all Persons, Firms, Corporations, Partnerships, Trusts, Trustees, Guardians, Executors, Administrators, Fiduciaries of Every Kind, the State of Oklahoma and All Agencies and subdivisions Thereof and all Other Beings of entities Owning Oil and Gas Rights or otherwise interested in the Common Source of Supply of Oil and Gas Known as the West Cement Medrano Pool Underlying the Hereinafter described lands Located in Caddo County, Oklahoma, or in the Production, Handling or Marketing of the Oil and Gas that may be located therein or produced therefrom, or having the right to share and participate, either directly or indirectly, in the benefits of such production:

Notice is hereby given that Amerada Petroleum Corporation, et al, lessees of record of more than 51% of the area of the aforesaid common source of supply of oil and gas, did on the 23rd day of October, 1946, file a petition, with the Corporation Commission of the State of Oklahoma, which petition, after having been signed by the Magnolia Petroleum Company, was refiled on this the 7th day of November, 1946, for an order creating the West Cement Medrano Unit, having for its purpose the unitized management, operation and further development of said common source of supply, defining the Unit Area of said Unit and

prescribing the Plan of Unitization applicable thereto, all as is authorized and provided for by House Bill 339 of the [fol. 33] 1945 Legislature of the State of Oklahoma, being 52 O. S., Supp. 1945, Sections 286.1 to 286.17.

That the lands sought to be included within the Unit Area of said Unit lie wholly within the following described sections of land located in Caddo County, Oklahoma, to-wit:

Section Six (6), Township Five (5) North, Range Nine (9) West of the I. M.

Section Thirty-one (31), Township Six (6) North, Range Nine (9) West of the I. M.

Section One (1) and Two (2), Township Five (5) North, Range Ten (10) West of the I. M.

Sections Twenty-five (25) to Twenty-nine (29), inclusive, and Sections Thirty-three (33) to Thirty-six (36), inclusive, in Township Six (6) North, Range Ten (10) West of the I. M.

That said petition has been set for hearing before the Corporation Commission at its court room in the State Capitol Office Building at Oklahoma City, Oklahoma, at 10 o'clock A.M. on the 9th day of December, 1946.

That all those to whom this notice is addressed and any and all other persons who claim that they will be affected either by the granting or denial of said petition shall have the right to be present and participate at said hearing and shall be granted the opportunity at said time and place to offer evidence and be heard; (a) in support or opposition [fols. 34-35] to the petition so filed; (b) in regard to the exclusion of land from or inclusion of other lands within the Unit Area of the Proposed unit; (c) in regard to the Plan of Unitization, in whole or in part, to be applicable to such Unit and Unit Area; and (d) in regard to any other matter or thing pertaining to the creation of such Unit or the unitized management, operation and further development of the aforesaid common source of supply of oil and gas.

Dated this 7th day of November, 1946.

Corporation Commission of Oklahoma. Reford Bond, Chairman; Ray O. Weems, Vice-Chairman; Wm. J Armstrong, Commissioner.

Attest: Tom McMurray, Secretary.

[fol. 36] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title Omitted]

ORDER RESETTING CAUSE FOR HEARING—Filed November 8, 1946

Now on this the 7th day of November, 1946, the above styled and numbered cause came on for hearing before the Corporation Commission of Oklahoma, in the Commission's Court Room, Capitol Office Building, Oklahoma City, Oklahoma; the Honorable Reford Bond, Chairman, Ray O. Weems, Vice-Chairman, and Wm. J. Armstrong, Commissioner, sitting.

The applicants appeared by their Attorneys of record and the protesting royalty owners appeared by Reford Bond, Jr., Attorney of Chickasha, Oklahoma, and the protestants moved that the cause be continued for the reason that they had insufficient time within which to prepare themselves for the hearing and the Attorneys for the applicants agreed that the cause might be continued. W. R. Wallace, Attorney of Oklahoma City, appeared for the Magnolia Petroleum Company and asked permission to [fol. 37] join in the petition in behalf of his company, which request was granted.

The Commission then continued the cause to December 9th, 1946, and directed that a new notice be published of the time and place of the hearing; said notice to be published in the Anadarko Daily News of Anadarko, Oklahoma and the Daily Law Journal Record of Oklahoma City, Oklahoma—both notices to be published at least 10 days prior to the date of the hearing.

[fols. 38-39] ORDER

It is therefore ordered that this cause be and the same is hereby continued from November 7th, 1946 to December 9th, 1946; that the Magnolia Petroleum Company be permitted to join in the petition as a party applicant; that upon the signing of the petition by the Magnolia Petroleum Company that the petition be refiled and that notice be republished in the Anadarko Daily News of Anadarko and the

Daily Law Journal Record of Oklahoma City, Oklahoma, at least 10 days prior to the date of the hearing.

Done and performed this 7th day of November, 1946.

Corporation Commission of Oklahoma, /s/ Reford Bond, Chairman; /s/ Ray O. Weems, Vice-Chairman; /s/ W. J. Armstrong, Commissioner. (Seal)

Attest: Tom McMurray /s/, Secretary.

[File endorsement omitted.]

[fol. 40] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title Omitted]

NOTICE OF HEARING—Filed November 8, 1946

The State of Oklahoma to all Persons, Firms, Corporations, Partnerships, Trusts, Trustees, Guardians, Executors, Administrators, Fiduciaries of every kind, the State of Oklahoma and all agencies and subdivisions thereof and all other beings or entities owning oil and gas rights or otherwise interested in the Common Source of Supply of oil and gas known as the West Cement Medrano Pool underlying the hereinafter described lands located in Caddo County, Oklahoma, or in the Production, handling or marketing of the oil and gas that may be located therein or produced therefrom, or having the right to share and participate, either directly or indirectly, in the benefits of such production:

Notice is hereby given that Amerada Petroleum Corporation, et al, Lessees of record of more than 51% of the area of the aforesaid common source of supply of oil and gas, did on the 23rd day of October, 1946, file a petition with the Corporation Commission of the State of Oklahoma, which petition, after having been signed by the Magnolia [fol. 41] Petroleum Company, was refiled on this the 7th day of November, 1946, for an order creating the West Cement Medrano Unit, having for its purpose the unitized management, operation and further development of said common source of supply, defining the Unit Area of said Unit and prescribing the Plan of Unitization applicable

thereto, all as is authorized and provided for by House Bill 339 of the 1945 Legislature of the State of Oklahoma, being 52O. S. Supp. 1945, Sections 286. 1 to 286.17.

That the lands sought to be included within the Unit Area of said Unit lie wholly within the following described sections of land located in Caddo County, Oklahoma, to-wit:

Section Six (6), Township Five (5) North, Range Nine (9), West of the I. M.

Section Thirty-one (31), Township Six (6) North, Range Nine (9) West of the I. M.

Section One (1) and Two (2), Township Five (5) North, Range Ten (10) West of the I. M.

Sections Twenty-five (25) to Twenty-nine (29), inclusive, and Sections Thirty-three (33) to Thirty-six (36), inclusive, in Township Six (6) North, Range Ten (10) West of the I. M.

[fol. 42] That said petition has been set for hearing before the Corporation Commission at its court room in the State Capitol Office Building, at Oklahoma City, Oklahoma, at 10 o'clock A. M. on the 9th day of December, 1946.

That all those to whom this notice is addressed and any and all other persons who claim that they will be affected either by the granting or denial of said petition shall have the right to be present and participate at said hearing and shall be granted the opportunity at said time and place to offer evidence and be heard; (a) in support of or in opposition to the petition so filed; (b) in regard to the exclusion of land from or inclusion of other lands within the Unit Area of the proposed unit; (c) in regard to the Plan of Unitization, in whole or in part, to be applicable to such Unit and Unit Area; and (d) in regard to any other matter or thing pertaining to the creation of such Unit or the unitized management, operation and further development of the aforesaid common source of supply of oil and gas.

Dated this 7th day of November, 1946.

Corporation Commission of Oklahoma, /s/ Reford Bond, Chairman; /s/ Ray O. Weems, Vice-Chairman; /s/ M. J. Armstrong, Commissioner.

Attest: Tom McMurray /s/, Secretary.

[File endorsement omitted.]

[fol. 43] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title Omitted]

RECORD OF TRIAL

The above entitled matter came on for hearing pursuant to assignment, on December 9th, 1946.

APPEARANCES

The Petitioners appeared by Counsel, R. M. Williams and others.

The Protestants appeared by Reford Bond, Jr., their attorney, by L. A. Davis, their representative, and certain of the protestants appeared in person.

The Corporation Commission being in session and this cause having been called for trial the Petitioners announced ready.

PROTESTANTS MOVE FOR CONTINUANCE AND DENIAL THEREOF

The Protestants, by Reford Bond, Jr., their attorney, announced that Protestants were not ready, and asked that the cause be continued, the reasons and grounds for continuance being orally stated by counsel for Protestants.

The Petitioners resisted the application for continuance and argument was heard upon the application for continuance, after which,—

[fol. 44] Chairman Bond: Is there anything further?

Mr. Bond: The Protestants have nothing further.

Mr. Williams: I don't know of anything else I might say, if the Commission please.

[fol. 45] Chairman Bond: Gentlemen, the Commission will start this case today and if the protestants are not in a position to cross examine your experts today, that you have the same experts when we finish the hearing. The hearing can't be finished today. This is the only day you can have now. When the case is passed for further hearing you have your experts back here so they can be cross examined. The Commission finds it would be difficult to cross examine your experts without an expert here and the Commission feels that these royalty owners should be prop-

erly represented, that they should have an opportunity to present this case properly and by taking your testimony today we won't lose today,—the case will have to be passed to some other day because it can't be finished in one day. You may proceed.

Mr. Bond, Jr.: May we have permission to file a pleading and answer to this application before the matter is finally closed?

Chairman Bond: You may.

Mr. Page: I desire to file some protests at some time on behalf of some lease owners in the pool.

Chairman Bond: You may file them now or you may make a statement.

Mr. Green: So we will have the record in orderly procedure, let me get the exhibits in.

[fol. 46] OFFERS IN EVIDENCE

Let me offer Exhibit 1, copy of application. Exhibit 2, copy of order setting cause for hearing; Exhibit 3, copy of notice issued by the commission setting the cause for hearing; 4, copy of the affidavit of the publication of the notice in the Anadarko Daily News; 5, copy of the affidavit of publication of the notice in the Daily Law Journal-Record; 6, copy of Order resetting cause for hearing at this time and place; 7, copy of the affidavit of republication of the notice in the Anadarko Daily News; 8, copy of the republication of the notice in the Daily Law Journal-Record.

Chairman Bond: Received.

Whereupon the exhibits so offered and received and copied in this record and made a part hereof as if copied at this point and will be found on pages ——.

Mr. Page: If the Commission please, I represent Virginia and M. L. McIntyre who are owners of 2/28ths of a 7/8ths working interest in what is known as in the East Plummer lease, to-wit, the east half of the Southwest Quarter of Section 34, township 6, N. range 10 West; I likewise represent B. E. Johnson who is the record owner of a 12/28th of a 7/8ths working interest of the same lease. I might [fol. 47] state at this time, as to his 12/28ths there is some litigation pending between he and the Stephens Petroleum Company. I further desire to state on behalf of these pro-

testants that they have not signed this application nor have they authorized anyone to sign it in their behalf although it has come to our attention that the Stephens Petroleum Company presumed to sign it for them. I want that in the record.

We desire to file separate protests at this time that 12/28ths of the 7/8ths working interests in the lease. No. 9 is the response and protest of B. E. Johnson and No. 10 will be the response and protest of Virginia and M. L. McIntyre.

Mr. Bond, Jr.: Tom Potter is the owner of a 7/8ths working interest of the oil and gas lease covering the west half of the northeast of the northeast of section, 5-10-Caddo County.

I would like to enter the appearances of the royalty owners, I hand to the Court Reporter typewritten copy of their names with the description of their properties at this time.

Chairman Bond: Very well.

Whereupon the list is handed to the reporter and marked Exhibit No. 11, and which exhibit so received is incorporated in this record and made a part hereof as if copied at this point.

[fol. 48] Coloquy Between Commission and Counsel

Mr. Adams: On behalf of the Palmer Oil Company, a formal protest has not been filed but I will be glad to state our objection and protest in the record.

Chairman Bond: You may recite your objection in the record and file your written protest later.

Mr. Adams: The Palmer Oil Corporation has not signed the application or petition filed in this case. It is the operator of a producing oil and gas lease in this field. It protests and objects to the plan in the petition and application filed herein, largely and for the same reasons that has just been expressed in behalf of the protestants who has just spoken. The Palmer Oil Corporation feels that the present plan is inequitable for the reason, largely, it does not provide for any rearrangement of relative property values from time to time as conditions and findings may warrant. Objection and protest is further made that the statute under which this application is filed is unconstitutional in that it violates

the due process clauses set forth in the 14th amendment to the Constitution of the United States and section 7, Article 2, of the Constitution of the State of Oklahoma,—it constitutes a denial of equal protection of the laws guaranteed by the 14th Amendment of the Constitution of the United States, that it affects the taking of property without [fol. 49] just compensation in violation of the 5th Amendment of the Constitution of the United States and Section 23, Article 2 of the Constitution of the State of Oklahoma; that it impairs the obligation of contracts in violation of section 10, Article 1, of the Constitution of the United States and Section 15, Article 2 of the Constitution of the State of Oklahoma; that it constitutes an unconstitutional delegation of power in violation of Article 21, Section — of the Constitution of the State of Oklahoma. We would like a reasonable time to file a formal protest.

Chairman Bond: You may have them filed.

Mr. J. A. Hollender: I'm a citizen that got caught with cattle in the Colorado blizzard. I'm a member of a family that owns a farm in this field; Phillips Petroleum Company operates 80 acres and Gulf Petroleum Company, using a contract that is embodied in those two leases. We shall expect the Phillips and the Gulf to keep up their end of this contract or get out and it seems to me we have only one thing left, those common people like I am, that is, to protect our property like our forefathers did, you understand,—I hope. We have nothing left us. I want to offer these two leases here,—that is our entire contract—if this Oklahoma Legislature can pass a law and nullify these contracts and [fol. 50] properties of ten thousand or a hundred thousand other leases, what is the citizen left to do. Never, never.

Chairman Bond: At the proper time the Commission will hear you and you can offer these contracts.

Mr. Hollender: This land has been in one family for forty years. Three people owned it who have passed to their reward. We're not speculators. We have had to fight nature in Colorado and we have won out. We are here fighting something else.

Mr. Williams: In regard to the Commission's ruling on the matter, we bow, of course, to the wishes of the Commission and the circumstances that dictated, and further

say at the proper time and place any of the witnesses introduced by the applicant will be made available for cross-examination by anyone who may desire further cross-examination.

In response to the statement of Mr. Johnson, may I say it was not ever known or even presumed that Mr. Stephens purported to sign on behalf of the Johnson interests. This is the first time we even knew that was thought. It wasn't known that Stephens Petroleum was presumed to have signed that interest.

Mr. Page: That interest is not signed to this application. [fol. 51] Mr. Williams: As far as I know that interested is not signed.

Mr. Page: Do you know whether it is or not?

Mr. Williams: I will say the signature is not on the application. It is not claimed by application that it is signed.

Mr. Page: Is not claimed at all?

Mr. Williams: No, sir.

OFFERS IN EVIDENCE

Before I call a witness, I have certain other formal exhibits I would like to introduce in the record, being exhibits 12 to 23, inclusive. May I say for the benefit of the Commission, these exhibits, namely 12 to 23, are copies of the Orders of this Commission that have to do with the West Cement Medrano Pool beginning with the time it was first adjudicated to be a gas pool and continuing down to the present date, defining it a common source of supply of both oil and gas. We offer those at this time. The particular copies I have to offer are taken from the Commission files.

Commissioner Weems: They will be admitted.

Whereupon Exhibits 12 to 23, inclusive, are received and made a part of this record and copied herein and made a part hereof as if copied at this point.

[fol. 52] A. J. MONTGOMERY, a witness being called and having been sworn, testified in answer to the interrogatories propounded as follows:

Direct examination.

By Mr. Williams:

Q. You were sworn?
A. I was.
Q. Your name is A. J. Montgomery?
A. That's right.
Q. Where do you live?
A. In Oklahoma City.
Q. What is your business or profession?
A. I am a geologist employed by the Phillips Petroleum Company.
Q. State briefly into the record your qualifications as a geologist, including your educational background and your practical experience, if any.
A. I received a degree, majoring in geology in the University of Oklahoma in the Spring of 1928, January 1st, 1928, I entered the profession of geology in the field. I have worked for Phillips Petroleum Company for 19½ years as a geologist and have been located in the Oklahoma City area since March 1st, 1934.
Q. What is your present position with Phillips Petroleum?
A. I've been District Geologist for Phillips since the fall of 1935.
Q. You are district geologist for the Phillips Petroleum at this time?
A. I am.
[fol. 53] Q. What territory is included in your territory?
A. From the South line of 4 North to the southeast corner of my district being southeast corner of township 4 north, 1 east, West Texas, north to Kansas, exclusive of the Oklahoma Panhandle.
Q. I will ask you if the pool known as the West Cement Medrano pool is included in your district?
A. It is.
Q. Are you acquainted with that pool?

A. Yes, sir.

Q. How long have you had contact and acquaintance with the West Medrano?

A. My first contact with it; we were doing surface geological work in that area in the Fall of 1932.

Q. Does your company hold leases in the Medrano pool?

A. It does.

Q. Do you know when that pool was first discovered?

A. About the time of the first World War, about 1916, was about the time of the first production.

Q. Are there other sands there other than the Medrano?

A. Many more.

Q. When was the Medrano sand first discovered?

A. Gas was first discovered, that is, production obtained from it in the Fall of 1936.

Q. Do you know in what well?

A. No. 6 Medrano, Magnolia.

Q. Let me ask you this question before we get into that. Where is the Medrano pool located?

[fol. 54] A. In the extreme northwest part of 5 north, 9 west, northeast part of 5 north 10 west and the southeast part of 6 north, 10 west, Caddo County, Oklahoma.

Q. Do you know where the discovery gas well was located?

A. It was in the southwest quarter of 36, 6 north, 10 west.

Q. Do you know when oil was first discovered in that pool?

A. In the Spring of 1932, on the Stephens-Pierson lease.

Q. Do you know where that well was located?

A. In the southeast quarter of 35, 6 North, 10 West.

Q. State briefly the general characteristics of the pool, nature of the sand and the formation and type of structure.

A. Medrano sand is a sand classified in the Pennsylvanian series and it is a member of the subdivision of the lower Hoxbar which is in this area, considered Young Pennsylvanian. In the Cement pool proper the Medrano sand is found below the Wade and above the Marchand sand and it ranges from approximately forty-one hundred feet on top to around sixty-three hundred feet on the flank, that is, the production part of it does.

Q. Is that a sandstone or limestone pool?

A. It's a sandstone pool, made by a conglomerated sand, and a good, clean sand.

Q. What do you mean by "clean sand"?

A. Why, quite porous and permeable.

Q. What information do the geologists have available with respect to the porosity and the permeability and other characteristics of the sand?

[fol. 55] A. There have been several wells cored by both wireline and conventional coring to the complete Medrano zone. I doubt that there is a well, over one or two in the field, that doesn't have an electric log also to supplement the information furnished by samples on this coring.

Q. Do you know whether or not the operators in that pool prior to the filing of this application have made a study of field wide geological conditions of the pool?

A. We did.

Q. How was that study conducted and by whom?

A. There was the chief geologists of the companies operating in the field. Everyone was contacted that was operating in the field—told them what we were going to do—asked them to have representatives there. With one or two exceptions that Committee got together and spent a gross period of approximately a month working from the geological aspects of the field, to make the maps that were used and the calculations.

Q. Did you consider in your study each and every part of the pool?

A. We did.

Q. Did you consider each and every well in the pool?

A. We did.

Q. I believe you testified you have electric logs on practically all the wells in the pool?

A. That's right, sir.

Q. Were those electric logs kept a secret information or [fol. 56] made available as public information?

A. They were public information as far as the Committee was concerned. I don't believe all of that has been released to the Log Exchanges in the State.

Q. They have been released to anyone who was interested in the pool and who desired to see them?

A. That's right.

Q. Have the boundaries of that pool, the Medrano sand pool, been reasonably defined by drilling operations as yet?

A. I think so, yes, sir.

Q. In your opinion as a geologist, do you have sufficient control from the wells that have been drilled, that is, from actual drilling operations, to determine the boundaries of the pool?

A. I consider so, yes, sir.

Q. Did your Committee consider the problem?

A. Very much so.

Q. Did your Committee come to the conclusion as a Committee upon that subject?

A. They did.

Q. Was there any disagreement?

A. No.

[fol. 57] Floyd Green: Is that the same copy of the map that is attached to the application?

A. It's the same base map.

Mr. Williams for Phillips Petroleum Company continues with the witness:

Q. I hand you what proposed to be a map and is marked as Applicant's Exhibit 24 and ask you to state what that is.

A. That is a map of the West Cement Medrano Producing area, it covers the proposed unit.

Q. What does that exhibit show, Mr. Montgomery?

A. It shows there in black ink the productive area of the Medrano sand in the West Cement Pool, it shows in the heavy boundary line the leases effective, the outline of the leases effective by the geological outline and also shows a line the cross section has been drawn on here, marked from "A" to "A."

Q. Is that the line shown in red on the map?

A. That is right, yes.

Q. Which goes through Sections 34 and 35 and up into Section 26?

A. That is right.

Q. How does the black line shown now correspond with your judgment with respect to the boundaries of the productive area of the pool?

[fol. 58] A. It is the boundary line.

Q. Is that the line that was drawn by your Geological Committee?

A. Yes, it was taken from our map, yes, sir.

Q. I believe you testified that in your opinion the line was established by actual drilling operations?

A. It was.

Q. Is it your opinion that a well drilled outside of that line will encounter Medrano production?

A. No.

Q. On the south of that line, what will you encounter?

A. Salt water.

Q. In the Medrano?

A. Yes.

Q. North of the north boundary line, as you have identified it on the map, what would you encounter if anything?

A. On the northeast we would encounter sand, on the northwest we would probably get water.

Q. Are the wells that have been drilled to the Medrano both gas and oil on this map?

A. Yes.

Q. How are the oil wells indicated?

A. With a filled-in black circle then encircled by a heavy black circle while the gas wells are the familiar six pointed [fol. 59] circle enclosed by a heavy black circle.

Q. Do you have an opinion as to the structure or construction of this exhibit both as to the lease lines, wells and boundaries of the pools and other information shown thereon?

A. Yes, sir.

Q. Is that correct or not?

A. It is correct.

Q. The applicants would like at this time to offer into evidence, Exhibit 24.

Chairman Bond: Received.

Q. Mr. Montgomery, you made reference to the right line appearing on Exhibit 24 being a line where a cross section was drawn, do you have with you a cross section to which you made reference?

A. Here it is.

Q. You say that instrument marked as Exhibit 24 is the cross section you refer to?

A. It is.

Q. State briefly what exhibit 25 proposes to show.

A. It's a cross section drawn from the south section of 26, 6N. 10 West, through the north part of 25 and through the central part of 34, 6 north, 10 west, the cross section on the right hand side starts in section 26 and is a cross section, only as if pertains to the Medrano sand showing the [fol. 60] thickness and subsea cap there with the gas in the upper part, the oil below it and the water of course below the oil. These points of gas-oil contact were taken from oil tests and which has firmly established these points.

Q. Does that propose to show how the formation lies underground?

A. It does.

Q. And what does the depth, 3000, 3500, 4000, 4500, and 5000 represent?

A. Depths below sea level.

Q. What is the approximate depth below the surface of the ground?

A. Elevation of Cement field is approximately average of 1500 or slightly below, so you will have to add your elevation below 2900, which will be roughly 4400. Roughly, it will be 6300.

Q. I not-, Mr. Montgomery, that the formation shown on this exhibit is considerably deeper, has considerable depth, is that usual or unusual in a field of this character?

A. Usual.

Q. That much of a depth?

A. In Cement.

Q. In other fields in Oklahoma, is that usual?

A. Not south.

Q. Applicants would like to offer in evidence Exhibit No. 25.

[fol. 61] Chairman Bond: Received.

Q. Mr. Montgomery, do you have an opinion as to the connection of the information as proposed to be shown in Exhibit 25?

A. We made the map from which it was made.

Q. Is it correct or not correct?

A. It is correct.

Q. Now, I believe you testified that there are other sands in what is known as the Cement field, do these sands overlie or underlie the Medrano Sand?

A. As I stated, the Wade Sand is the sand immediately above the Medrano sand and immediately zero approximately above the Medrano sand, the Marchant sand is roughly 300 feet below the Medrano.

Q. Are there other sands above the Wade sand, if so, name them briefly.

A. Yes. Going up the hill, or up the section from the Wade it is locally called Funk or Fuel Sand above that is Nile sand, above that Rowe sand, above that will be the Rowe sands which is actually a series of sands. In the west dome Griffin sand is above this.

Q. Is that sand known as the Noble-Olson?

A. It is still above the Garner sand.

Q. Is that a general sand?

A. Yes.

[fol. 62] Q. The sands you just referred to are all above the Medrano?

A. Yes.

Q. You mentioned the Marchant, that underlies the Medrano, are there any others?

A. Yes, Melton zone, that is a structure of sand, now it is called different names by different companies, or Lackey Zone or below that you could call it the Charlston Zone which is somewhat correlative with Charlston of the Chickasha area.

Q. Are these sands productive or oil or gas or both?

A. To my knowledge, the only ones I mentioned that is not productive and not producing in West Cement is the Wade sand.

Q. Is there any communication between these other sands that you have made reference and the Medrano?

A. No.

Q. What separates or segregates these different sands?

A. Impervious shale beds.

Q. And that has no connection except they overlie or underlie the Medrano?

A. That is correct.

Q. Then is it your opinion that the Medrano sand is a

common source of supply separate from these other sands?

A. It is.

Q. Can the Medrano sand be treated and be separate and apart?

A. It can.

[fol. 63] How is this being produced today in relation to the others?

A. Separate in all cases.

Q. And in your opinion, a separate source of supply?

A. That is right.

Q. Is the Medrano sand, Mr. Montgomery, readily identifiable in the drilling of a well?

A. Well, the Pennsylvania is in that area, you know, where the Medrano will come in a section and for that reason it helps identify it and the others, then the characteristics with the geological marks both in the top and between part of Medrano some wells in the field do not have conglomerate on top, but in my mind, everyone of it is the base, with electrie logs it's hard to interpret what is Medrano and what is not.

Q. Mr. Montgomery, the Commission Orders that have been introduced here have found and referred to the Medrano sand as being a separate common source of supply, do you as a geologist have an opinion on that subject?

A. Yes, I think they are correct.

Q. And the Medrano outlined on Exhibit 24 is a common source of supply of oil and gas?

A. Yes, it is.

Witness examined by Floyd Green, of Corporation Commission:

Q. This application pertains only to the Medrano sand?

[fol. 64] A. To my knowledge, that is right.

Q. And does not seek to unitize any others?

A. Yes, that is right.

Q. Do you know the names of the Committee members who worked with you on Exhibits 24 and 25, and who they represent?

A. They didn't make the map or the cross section from which it was drawn.

They are J. Lawrence Muir, Amerada.

Q. What is he?

A. They are all Geologists.

R. W. Brockley, A. H. Richards with Anderson-Prichard Oil Corporation.

Q. Engineer or Geologist?

A. Geologist.

J. T. Richards with Gulf Oil Corporation. W. L. Morman of Magnolia Petroleum Company, A. J. Montgomery, I. Curtis Hicks with Phillips Petroleum Company, P. A. Wallace with Stephens Petroleum Company and Ray Stephens, Incorporated.

Q. That group composed the committee that made the study of this particular Medrano sand?

A. Yes.

Q. And prepared the information from which Exhibits 24 and 25 were drawn?

A. That is right.

[fol. 65] Mr. Williams of Phillips Petroleum Company examines the witness:

Q. You say that you did not prepare Exhibits 24 and 25, but they were prepared from maps that your committee did draw, have you compared Exhibits 24 and 25 with the base maps?

A. Not in exact detail.

Q. Have you compared them sufficiently for accuracy?

A. I have.

Q. And you testified that they are accurate?

A. That is right.

Q. Have you named a number of geologists representing different operators—were there other operators in the pool that were invited to have their geologists set in on your deliberations?

A. They were.

Q. Do you have the information from all the other companies with respect to these wells?

A. Yes, sir.

Q. I believe that is all.

Chairman Bond: Any further cross examination?

Mr. Adams: I don't understand whether cross examination is to be today of this witness or delayed.

Chairman Bond: If you desire, you may cross examine today.

Mr. Adams: Its agreeable with us to delay our cross examination.

Mr. Adams examines the witness:

Q. As I understand it, did you not prepare Exhibits 24 and 25?

[fol. 66] A. I did not.

Q. And they were not prepared under your immediate supervision?

A. No, sir.

Q. I believe you testified that the Medrano sand was operated in this field as a separate horizon?

A. That is right.

Q. Isn't it a fact that there are some wells in which production was being had in the Medrano sand and into which gas from another horizon was being injected?

A. Those wells are duly completed and separated from the formation by packers in the hole.

Q. Isn't it a fact that gas from the upper horizon is being injected into the Medrano and that through that manner and means oil is being produced in the Medrano?

A. I believe Gulf does have a side door check.

Q. Northwest corner of the pool?

A. Right on the Pell lease.

Q. Then as far as the present operations are concerned, there is production being had from the Medrano as well as gas being used from the other horizon?

A. As a lifting method.

Q. That is correct?

A. Yes.

Q. Are you in position to say whether or not oil could be [fol. 67] produced from the Pell well without the use of this gas to which you referred to the same extent as the Pell well is being produced?

A. Yes, they could undoubtedly pump the well, but it has been by order of the Commission and this gas was found in the lower part of the Wade which was rather unusual and they got special permission of the Commission to use that gas as a lifting element.

Q. Do you know whether that gas was lifted into the Medrano?

A. No, I don't know the mechanics.

Q. You don't know whether it's merely used to list or merely to get the oil into the well?

A. It is not used as a means of getting the oil into the well but as a lift, at least, that is the order of the Commission. I am not familiar with the mechanics of the process.

Mr. Adams: We reserve any further cross-examination until further hearing.

Chairman Bond: Very well.

Mr. Williams: To the extent that any party is ready to cross examine, they should proceed to cross examine the witness and the extension of time should apply only to those who are not ready to carry on the cross examination?

Chairman Bond: That is right.

[fol. 68] Mr. Williams of Phillips Petroleum Company examines the witness further:

Q. The Wade sand to which counsel has made reference of the Pell well overlies the Medrano sand, is that right?

A. Yes.

Q. Does the gas in that sand enter the Medrano sand to produce the oil or used as a lifting process to lift it higher in the pipe?

A. Lifting process in the casing.

Q. Is that used as a substitute for repressuring program or substitute for a pump?

A. Substitute for a pump.

Witness excused.

[fol. 69] OFFERS IN EVIDENCE

Mr. Williams: The next order of proof, if the Commission please, is the introduction of leases and assignments, to show the interests of the applicants and subscribers named in the Petition, the recorded leases and assignments under which they claim and the extent of the area covered. We have the original leases and assignments and we have photostatic copies of each and I assume it can be stipulated that the photostatic copies can be utilized in lieu of the originals.

Chairman Bond: If there is no objection, you may offer the originals, withdraw them and substitute copies.

Mr. Lowe: We have the original leases and we have a description of each lease. We might eliminate——

Chairman Bond: Counsel might want the lease and call for it and that might cause delay, —counsel may speak up for themselves.

Mr. Bond: We would like you to present the complete leases.

Mr. Wiliams: We have the original leases and are willing to introduce them, have them identified, and substitute copies, photostatic copies if they may be utilized, instead of the original leases.

Chairman Bond: The Commission will respect any agreement counsel may make in that respect. You may offer the original, withdraw it and substitute photostatic copies for the originals.

Mr. Green: Does anyone object to the photostatic copies being offered in lieu of the originals?

Reporters Note: No expression from anyone present.

Mr. Williams: Is it the desire of any party that we take each lease and mark and refer to it separately, as an individual exhibit and introduce it separately, or may the leases of each applicant be introduced as a group, under one exhibit number?

[fol. 70] Mr. Adams: With respect to the Sterba lease, we would like to have that——

Mr. Williams: Judge Brown tells me, with respect to the Anderson-Prichard Company——

Judge Brown: I think we may group them, however, I do not have them in court, —I thought we would have other witnesses and that we would not reach that part of the case today. I'll have them here.

Mr. Williams: We offer the original leases and assignments of the Phillips Petroleum Company, as a group, which we ask to be marked as Exhibit 26, and we ask to withdraw the original leases and substitute therefor photostatic copies thereof.

Chairman Bond: Received. Permission granted to withdraw the originals and substitute photostatic copies.

Reporter's Note: Counsel presents to the Reporter a number of original documents, which are grouped and marked as one exhibit, Number 26. Counsel then withdrew such originals and handed to the Reporter photostatic copies of the respective original instruments, which photostatic copies are marked Exhibit 26 and are attached in proper numerical order in Exhibit Binder accompanying this record as a part thereof.

Mr. Wallace: We offer the original Magnolia leases and assignments, with the same request.

Chairman Bond: Received and permission is granted to [fol. 71] withdraw the originals and substitute photostatic copies.

Reporter's Note: Counsel presents a group of original documents, which is marked Exhibit 27. Counsel then withdrew the original documents and handed to the reporter a number of photostatic instruments as copies of the original documents constituting Exhibit 27, which copies were grouped, marked Exhibit 27 and are attached to this record in numerical order in Exhibit Binder accompanying this record and made a part hereof.

Mr. Mieher: Amerada Petroleum Corporation offers in evidence the original leases and assignments and asks permission to withdraw such original documents and substitute photostatic copies therefor.

Chairman Bond: Permission is granted to substitute copies. Received.

Reporter's Note: Counsel for Amerada Petroleum Corporation presents to the reporter a number of documents, which are grouped and marked as one exhibit, marked Exhibit 28, and withdrawn. Photostatic copies of such documents are then presented in lieu of the originals and such photostatic copies are marked Exhibit 28 and attached in proper numerical order is Exhibit Binder accompanying and being made a part of this record.

Mr. Williams: If it please the Commission, we have here the files of Ray Stephens, Incorporated, and Stephens Petroleum Company, and other instruments, including assign- [fol. 72] ments, leases, etc., which are not at this particular

moment segregated into groups. I would like to tender at this time the several leases and assignments, with the understanding that a representative of the applicant be permitted to make a statement, after which the documents will be placed in proper form and delivered to the reporter, as Exhibit 29.

Chairman Bond: You may do so and the same order is made.

Reporter's Note: As stated above, the documents mentioned are hereinafter segregated, the originals are grouped and marked Exhibit 29, are withdrawn and photostatic copies are delivered to the reporter, marked Exhibit 29 and are attached in proper numerical order in Exhibit Binder accompanying and made a part of this record.

JOHN SCHOEPPEL, Representative of Stephens Petroleum Company and Ray Stephens, Incorporated, being first duly sworn, testified as follows:

Examination by Mr. Williams:

Q. State your name.
A. John Schoeppel.
Q. With whom are you associated?
A. Stephens Petroleum Company.
Q. And with Ray Stephens, Incorporated?
A. Yes, sir.
Q. Do you have a statement you wish to make into the [fol. 73] record in behalf of the parties with whom Ray Stephens, Incorporated, and Stephens Petroleum Company appear and have signed?
A. The Stephens Petroleum Company and Ray Stephens, Incorporated, Mr. Stephens signed those two names, —we wish the record to show, in addition thereto, we represent the additional following parties, who either own or have a working interest, —Stephens Petroleum Company; Ray Stephens, Incorporated; Waldo E. Stephens, Ray Stephens; Ray Stephens, Incorporated, Trustee; Ray Stephens, Trustee; Ray and/or Waldo E. Stephens, Trustee; Waldo E. Stephens, Sole Trustee; Doris M. Stephens, —and we have

a telegram designating Stephens Petroleum Company and granting them Power of Attorney to act for Gamble Brothers.

Mr. Williams: We offer in evidence the telegram, —do you have it?

A. Yes. (Witness produces telegram)

Chairman Bond: Received.

Reporter's Note: The telegram referred to and produced by the witness is marked Exhibit 30 and is made a part of the record. A true, complete copy thereof is attached in proper numerical order in the Exhibit Binder.

Q. Is it claimed that the Stephens Petroleum Company or Ray Stephens, Incorporated, is authorized to act for or represent B. E. Johnson?

A. No, sir.

[fol. 74] Questions by Mr. Page:

Q. The map here show, does it not, that the Stephens Petroleum Company is the owner of the entire interest in the Plummer East 80?

A. Well, the map I have here shows—I am not familiar with this exhibit.

Q. Are you referring to, —what exhibit do you have there?

A. Exhibit 24.

Q. Is it not a fact that that exhibit shows, on its face, that the Stephens Petroleum Company is the owner of the entire interest in that tract, —the Plummer East 80?

A. Well, the map shows here, at the top, I see Stephens Petroleum Company, I don't know what that purports to represent.

Q. The name, "McIntyre," or "B. E. Johnson," doesn't appear anywhere on that map, does it?

A. No, sir.

By Mr. Green:

Q. Exhibit 29 will show accurately each tract owned by Stephens Petroleum Company and Ray Stephens, Incorporated, and what their interests may be?

A. Yes, sir.

Question by Mr. Williams: I will ask you also if it does not purport to show now not only the holder or owner, but the operator as well?

A. That's right. Where we have the interest and also are the Operator, it shows "Stephens Petroleum Company" as owner and operator of that lease, if that's what these [fol. 75] names represent.

Mr. Williams: We have here photostatic copies showing the interest of SUNRAY, —we do not have the originals at this time and I don't know whether they will be here today, but may I make formal tender of the originals into the record, with the understanding that they will be brought into court and when they are produced the originals may be marked Exhibit 31, withdrawn, and the photostatic copies substituted therefor?

Chairman Bond: Exhibit 31 is received.

Reporter's Note: The originals of the several documents constituting Exhibit 31 are later produced, marked Exhibit 31, withdrawn and the photostatic copies mentioned substituted therefor. Exhibit 31 is attached in proper numerical order in the Exhibit Binder attached, accompanying and made a part of this record.

Mr. Williams: Let me further state that for the record Exhibit 26, introduced in behalf of Phillips Petroleum Company, is also introduced in respect to the interests of the Cities Service Company and Foster Petroleum Company as to their respective interests.

Chairman Bond: Received.

Reporter's Note: At this point the further hearing of this cause was recessed until 1:30 o'clock P.M. on this date, December 9, 1946.

[fols. 76-77] Chairman Bond: Gentlemen, are you ready to proceed?

Mr. Williams: Yes, your Honors.

It is the request of Mr. Adams, with the Palmer Oil Corporation, we would like to introduce the lease and assignments and contracts pertaining to the Palmer SW quarter of Section 35 as a special exhibit separate and apart from the other leases of the Gulf Corporation as Exhibits Nos.

32, 33, 34 and 35, inclusive. We offer in evidence Exhibits 32 to 35, inclusive.

Chairman Bond: Received.

Mr. Williams: Now, then, I would like to offer at this time the leases and assignments on behalf of the Gulf as Exhibit 36 being the exhibit of the applicant, Exhibit 36 being the leases and assignments which are in addition to Exhibits 32, 33, 34, and 35.

Chairman Bond: Received.

Mr. Williams: In order to keep the record straight, Judge Brown suggests that we tender Exhibit 37, the leases and assignments which Anderson-Prichard will tender and furnish at a later date.

Chairman Bond: Received.

Mr. Williams: There are two or three subscribers, we don't have of Stanolind Oil and Gas Company and one or [fol. 78] two others that are very small interest, and we will introduce them out of order.

Chairman Bond: Very well, introduce them out of order.

[fol. 79] Whereupon, GILBERT WOOD, of lawful age, being first duly sworn, testified as follows, to-wit:

Witness examined by Mr. Williams of Phillips Petroleum Co.

Mr. Williams: May I say to the Commission, I am introducing this witness more from a statistical standpoint, he is familiar with all the exhibits introduced and I have asked him to calculate the ownership of the parties interested, and this is to be purely statistical information.

Q. You may state your name.

A. Gilbert Wood, Jr.

Q. Are you associated with Phillips Petroleum Company?

A. Yes.

Q. What capacity?

A. Petroleum end.

Q. Where do you live?

A. Bartlesville, Oklahoma.

Q. How long have you been associated with them?

A. Seven years.

Q. What connection have you had with the study of the Cement Medrano Pool in preparatory to the filing of this application?

A. A good bit of night time for the past two years, studying the Medrano Pool, and during the last year and a half I have worked actively with the Engineering Committee, all with the idea of more efficient production and greater [fol. 80] ultimate recovery, and we have written a report from the results as to the results of our engineering work at the request of the operating committee.

Q. Is a part of that study you have made a study of the various operators and leases in the pool and locations of the leases?

A. Yes.

Q. And the leases that were introduced here today?

A. Yes.

Q. Have you made, at my request, a calculation as to the acreage within the area shown on Applicant's Exhibit No. 24, namely, the acreage within the proposed unit area also the separate calculation as to the geological outline as shown on that exhibit?

A. That is correct.

Q. I will ask you to state for the record the number of acres of land from the standpoint of surface acreage within the unit, boundary.

A. The surface acreage within the unit boundary is 3700 acres.

Q. Did you make that study and calculation yourself?

A. Yes.

Q. Now, I will ask you to state for the record the number of acres included in the reserve area or geological outline as indicated on that exhibit.

A. The number of acres within the geological outline is 3148.66.

[fol. 81] Now, I will ask you, Mr. Wood, if you at my request made a computation of the acreage held by the various applicants in this proceeding and also by the subscribers to the proposed plan of unitization?

A. Yes.

Q. I will ask you first if you will detail for the record the acreage of the applicants in this proceeding, I mean surface acreage, the figures I am calling for are surface figures and read the names of the companies and their surface acreage of each.

A. Mr. Williams, I have the per cent of total of each applicant, I haven't the actual acreage, I have the per cent total for each applicant.

Q. Calling the total acreage within the area and the per cent of that is a matter of simple deduction?

A. Very simple.

Q. Will you detail the per cent, please, sir?

Commissioner Armstrong: This total is the one that participated in this unit, the total within the geological outline?

Mr. Williams: Within the unit area, but we are furnishing the per cent of both areas. There are 3700 acres.

Commissioner Armstrong: That is the total involved?

[fol. 82] Mr. Williams: Within the unit area.

A. Within the unit, Phillips Petroleum Company, 18.58 per cent. These are the subscribers you want first?

Q. I asked for the applicants first.

A. Magnolia Petroleum Company, 24.32; Amerada 4.87; Ray Stephens Incorporated, 4.78; Anderson-Prichard Oil Corporation, 9.46; my total is 74.41 per cent.

Q. In other words, the applicants to this petition own leases covering 74.41 per cent of the total acreage of the unit area?

A. That is correct.

Q. Now, there are those who subscribed to the plan in addition to the applicants for this proceeding, is that right?

A. That is right.

Q. Have you computed that per cent?

A. I have.

Q. Will you give for the record the additional information as to the subscribers that are not applicants?

A. Ray Stephens, Incorporated, Trustee, .81.

Q. Per cent?

A. It's all per cent. Gamble Brothers, for which they have Power of Attorney for Stephens Petroleum Company, and Ray Stephens, Inc., 1.92; Cities Service, .54; Foster Petroleum Company, .27; Sun Ray Oil Corporation, 6.49; Gulf Oil Corporation, 6.49; Farris Rookstool, .54; Stanolind [fol. 83] Oil and Gas Corp., .27; Caddo Oil Company, .27; and one-half of the acreage of the Gulf Palmer Sterba lease 2.16 and my total on that is 94.17 per cent.

Q. In other words, the subscribers for the plan of unitization of the pool to be introduced owns leases on 94.17 per cent of the acreage within the area?

A. That is correct.

Q. You say that you have the same information of the interest of the companies in per cent of the reservoir area?

A. That is correct.

Q. Will you read those figures?

A. In percentage of the reservoir on geological area?

Q. Read all the companies and the names all speak for themselves, because the application is a part of the record.

A. Phillips Petroleum Company, 18.81 per cent; Magnolia Oil Company, 24.70 per cent; Amerada, 4.07 per cent; Ray Stephens, Inc., 4.08 per cent; Stephens Petroleum Co., 11.85; Ray Stephens, Inc. Trustee, .73; Gamble Brothers, 1.05; Cities Service, .59; Foster Petroleum Company, .29; SunRay, 7.62; Gulf, 7.07; Rookstool, .65; Stanolind, .07; Anderson-Prichard, 8.81; Caddo Oil Company, .31; one-half of Gulf-Palmer Sterba, 2.54; my total on that is 94.23 per cent.

Q. In other words, the subscribers to the plan own leases upon 94.23 per cent of the total acreage within the reservoir area as shown on Exhibit 24?

A. That is correct.

[fol. 84] Commissioner Armstrong: Now, the other approximate six per cent is that undivided interest mostly?

Mr. Williams: Part of the remaining per cent is owned by Palmer Oil Corporation which I think is the largest single interest. There is some undivided interest of Stephens represented by Mr. Page here, then the Potter lease, then there is one or two other small interests. One undivided interest, I believe.

A. (Witness) Mr. Potter's interest under the unit is .54 per cent.

Commissioner Armstrong: That is a separate lease that is not in the unit?

Mr. Williams: Lloyd Noble has one. Isn't that right, Mr. Wood?

A. Yes.

Q. Developed or undeveloped?

A. Undeveloped.

Q. Do you know of any separate lease in the unit area not shown in the figures given?

A. These are the only two separate leases represented by the figures I gave.

[fol. 85] Cross examination.

By Mr. Adams:

Q. Referring to the Palmer-Sterba lease, do you know, Mr. Wood, that there is no well drilled on that lease to a greater depth than 6000 feet?

A. I do.

Q. Then the only Medrano sand wells on that lease are completed at a depth less than six thousand feet, is that correct?

A. That is correct.

Q. Irrespective of that fact, you in your calculation have given one-half of the reservoir area attributable to that lease to the horizon below six thousand feet?

A. That is correct.

Q. And you also attributed one-half of the surface rights or area in that lease to the holder of the lease interest below six thousand feet?

A. That is correct.

Q. You know that there has been three wells drilled on that lease to the Medrano formation, is that correct?

A. Three to the Medrano and two now producing.

Q. And these are reflected on Applicant's Exhibit 24, is that right?

A. That is correct.

[fol. 86] Q. One of these wells is at the northwest corner of the lease, one in the southeast corner of the lease, and one in the northeast corner of the southwest quarter of that particular lease which also covers the southwest quarter of Section 35, is that correct?

A. That is correct.

[fol. 87] Q. Now, irrespective of the location of the leases, and the fact that none of these wells have disclosed any Medrano sand formation, at a depth greater than six thousand feet, you personally have made this allocation of half of the reservoir area in the lease and have attributed——

Mr. Williams: If the Commission please, this is a statistical witness only,—he testified there that he attributed half of the reservoir area to Palmer and half to the Gulf.

Chairman Bond: Let him inquire.

Mr. Williams: Go ahead.

Q. Mr. Wood, you are merely presupposing that there will be production from the Medrano below 6000 feet on this lease,—is that correct?

A. No, it is not correct,—I am not presupposing anything about production. I am considering equal surface rights.

Q. But, I don't understand, your reservoir area,——

A. The reservoir area is the area underlain by the surface of this lease,—all of this 160 acre tract lies directly over the reservoir area, therefore the area covered would be the area under consideration.

Q. When you figure the surface area, you don't mean to infer to the commission, you mean in this lease there are 160 acres of Medrano surface area, is that what you mean?

Mr. Williams: The Medrano is,—this lease falls in the center of this pool, and,——

[fol. 88] Q. I am asking about this one lease,—just take that one lease, forget the rest of the pool,—how many acres of reservoir area do you say there is in that one 160 acre lease?

A. 160.

Q. You are attributing one-half of that area to Gulf?

A. That's correct.

Q. When you say, "reservoir area," you are not necessarily referring to Medrano,—my question is in relation to Medrano, why do you attribute any reservoir area to Gulf when you know that the only wells drilled on this lease have encountered the Medrano at a depth of above 6000 feet?

A. Well, in my opinion, not being a lawyer,—this is a written contract and the lessee has surface rights,——

Q. I am not questioning the surface rights,—you are referring only to surface rights?

A. Yes, the surface area.

Q. Well, maybe I don't understand——

Mr. Williams: If the Commission please, this is wholly a statistical matter, let me ask him——

By Mr. Williams:

Q. Mr. Wood, when you refer to reservoir area, as shown on this exhibit, what do you understand that to mean?

A. The area directly overlying the oil and gas zones.

Q. Looking at Exhibit 24, which I hold up for the view of the Commission and in view of counsel, will you point out what you refer to as the reservoir area?

[fol. 89] A. Right here. (Witness indicates on Exhibit 24)

Q. That's the area within the black line, that Mr. Montgomery referred to as the Medrano Area?

A. Yes.

Q. When I referred to Medrano, what did you understand me to mean?

A. This hatched line around here. (Indicating on Exhibit 24)

Q. Do you understand that I mean and refer to the acreage factor that each bears to the total?

A. The acreage factor which each bears to the total.

Q. How many acres are there in the Medrano area on the Sterba lease?

A. 160.

Q. What would be the total percentage of the 160 acres?

A. 4.32.

Q. And you are leaving it to the Commission to divide that 4.32 between Palmer and Gulf?

A. Yes.

Q. You would divide it 50-50?

A. Yes.

Q. Is that based on production or surface area?

A. Surface area.

By Mr. Adams:

Q. It would be a little more understandable if you would say "surface area" instead of "reservoir area."

A. Well, I'll accept the amendment.

The Witness is excused.

[fol. 90] H. H. KAVELER, Bartlesville, Oklahoma, was sworn as a witness and testified as follows, to-wit:

Direct examination by Mr. Williams:

Q: You may state your name.
A. My name is H. H. Kaveler, spelled K a v e l e r.
Q. You were sworn?
A. Yes, sir.
Q. Where do you live?
A. Bartlesville, Oklahoma.
Q. What is your business or profession?
A. My profession is petroleum engineer.
Q. Will you state for the record your qualifications, as a petroleum engineer, including your educational backgound and your experience?
A. I am a graduate of the Missouri School of Mines and Metallurgy in 1927; a B. S. Degree in Chemical Engineering from the same school in 1928; I have a Degree of Master of Science, Chemical Engineering, and took work—; in 1929 I received the Degree of Doctor of Philosophy and Chemistry; I worked as Assistant Instructor at Missouri School of Mines in 1925 to 1928; served as instructor at the University of Maryland in 1929 and to 1931; I served as instructor of chemistry in the George Washington University from 1931 to 1935; 1935 to '36, I was employed as Assistant Chemist with the United States Bureau of Mines, Pittsburgh, Pennsylvania; in November, 1936, I was em-
[fol. 91] ployed by Phillips Petroleum Company as section chief in charge of crude oil production, where I spent three and a half years; one year in the Department of Economics, dealing with the valuation of oil and gas properties. In May, 1941, I was appointed to my present position, that of Assistant to the Vice-President, Crude Oil Production Department of the Phillips Petroleum Company. In my present capacity it is my duty to supervise all the crude oil production of the Phillips Petroleum Company, to go before regulatory bodies with relation to crude oil production and to deal generally with the problems associated with the valuation of crude oil properties and particularly to deal with matters related to the unitization of oil pools.

Q. Does that include supervision of the reservoir, engineering section of your company?

A. It does.

Q. You are at the present time, Assistant to the Vice President in charge of production matters for the company?

A. I am.

Q. Over what area does your jurisdiction extend in your duties for the company?

A. Over the United States.

Q. That includes this pool known as the West Cement Medrano Pool?

A. It does.

Q. Does your Company own properties in the West Cement Medrano Pool?

[fol. 92] A. The Phillips Petroleum Company does own properties within the West Cement Medrano Pool.

Q. I will ask you if your experience with the company and your duties have brought you into contact with that pool and have given you a knowledge of that reservoir and the production practices there existing?

A. It has,—my acquaintance with the West Cement Medrano Pool dates from the first production, in October 1936, and I have had a continuous interest and acquaintance with the pool since that time, due to the fact that the Phillips Petroleum Company owns substantial holdings in the area, I have had occasion to study the pool since its inception.

Q. From your knowledge of that pool and from the experience of operators in the pool, will you state whether an association or organization has been formed to make a study of that pool?

A. It became evident to Phillips Petroleum Company and to other operators having leases within the West Cement Medrano Pool that the pool could be operated much more efficiently than it had been operated up to the middle of 1945 or approximately that time——

Counsel for Protestants: The answer is not responsive.

Mr. Williams: Mr. Kaveler is laying the ground work, if the Commission please.

Chairman Bond: Very well.

Q. Go ahead.

A. It became obvious to the Phillips Petroleum Company [fol. 93] and to a number of other operators in the pool and owning leases in the West Cement Medrano Pool, that the pool could be more efficiently operated than it had been operated previously by the bringing about of a unitization of the pool whereby the excessive withdrawal of gas could be stopped, and a gas injection pressure maintained. It was with that thought in mind that the Phillips Petroleum Company contacted other operators in the pool, early in 1945.

Q. How was that contact made?

A. It was made by sending a representative to call on a number of the other operators and as a result of these calls, a letter was written, under date of August 8, 1945, over the signature of Mr. C. P. Dimit, which letter I prepared for his signature. The letter was written for the purpose of bringing the operators together so that proper steps could be taken to bring about the unitization of the pool.

Q. To whom was that letter sent?

A. That letter was sent to: Amerada Petroleum Corporation, Attention of Mr. Earl S. Porter; Anderson-Prichard Oil Corp., Attention of Mr. W. T. Payne; Gulf Oil Corporation, Attention of Mr. Rush Greenslade; Magnolia Petroleum Company, Attention Mr. D. A. Little, Pres.; Palmer Oil Corporation, Attention Mr. Tom Palmer, Pres.; Phillips Petroleum Company, Ramsey Petroleum Corp., Attention Mr. W. R. Ramsey, President; Ray Stephens, Inc., Atten- [fol. 94] tion Mr. Ray Stephens, President; Sunray Oil Corporation, Attention of Mr. Harry Mack, and the letter requested a statement from each of the operators as to whether the proposal to unitize was of sufficient interest to the operators to warrant a meeting for the further consideration of the unitization of the pool.

[fol. 95] By Mr. Williams:

Q. Do you have with you a copy of the letter that was sent to all operators in the pool?

A. I have.

Q. I hand you what the reporter has marked Exhibit No. 38, I will ask you to state what that is.

A. That is a letter, under date of August 8th, 1945, addressed to the operators in the West Cement Pool, subject of the letter, "West Cement Pool, Consideration of Unit Operation."

Q. Is that the letter to which you referred that went to all the operators?

A. Yes, sir.

Q. Applicants at this time would like to offer into evidence Exhibit No. 38.

Chairman Bond: Received.

(The exhibit so offered and received is copies in this record and made a part hereof.)

By Mr. Williams:

Q. State briefly, if you will, what if any study or work has been done along that line pursuant to this letter?

A. Shortly after August 8th, 1945, when that letter was sent, the operators had a meeting in Tulsa, Oklahoma, for the purpose of organization of the West Cement Operators Committee, the purpose of which committee was to conduct cooperatively a study of the feasibility of unitized operation of the West Cement Medrano pool. As a result of that meeting, a committee was formed, H. H. Kaveler rep-[fol. 96] resenting the Phillips Company, was asked to act as Chairman of the Operators Committee and steps were taken to immediately form working sub-committees for the purpose of dealing with the question of unit operation. Two sub-committees were formed, one was a sub-committee of geologists who were charged with the responsibility of determining whether or not the pool had been developed to the point where its limits could be reasonably ascertained. Secondly; they were to ascertain the limits of production in the West Cement Medrano sand, and, thirdly, the geologists were instructed to prepare for submission to the operators committee a net productive sand thickness map which would reflect the net productive thickness of the oil saturated and the gas-saturated zone in the Medrano pool. A second sub-committee—by the way, may I inject, the members of the geological sub-committee were those men whom Mr. Montgomery stated this morning to be the geologists who prepared the geologic maps which were the basis of his testimony. A second sub-committee was formed called the Engineering Sub-Committee and that sub-committee was given instructions to prepare an engineering prospectus of the benefits to be derived from a unitized operation

of the West Cement pool and to report to the operators committee a proposed method of equitable distribution within such unit and the equity of distribution based upon the method which they proposed. The two sub-committees and the operators committee——

[fol. 97] Q. Who served on the engineering sub-committee, if you know?

A. Mr. Bodbold of the Gulf Oil Corporation, was chairman of the engineering sub-committee, Mr. Gilbert Wood, Jr., of Phillips Petroleum was a member and Mr. Charles Danchersen of the Amerada Petroleum Company was a third member. The Operators Committee and its respective sub-committees met frequently from time to time over the year that intervened between August, 1945 and August, 1946. During the course of that year each committee prepared its report and turned the results of its findings over to the operators committee. The operators committee received and accepted their reports, had them appointed a legal sub-committee, comprising respresentatives, as I now recall, from the Phillips Petroleum, Anderson-Prichard Oil Corporation, Amerada Petroleum Company, Gulf Oil Corporation, Sunray Oil Corporation and Magnolia Petroleum Corporation, which legal sub-committee was instructed to prepare a draft of a proposed unit operating contract, prepared in compliance with the conclusions that were jointly reached by the geologists and engineers under the supervision of the operating committee. Such a contract was prepared. At the end of August, 1946, recognizing the fact that at that time a very substantial fraction of the working interests in that pool had reached an agreement on a method for the unitized operation of the West Cement Medrano pool and had, for the first time, reached an ultimate agreement on a method of developing the equity in such unit between all the parties concerned.

[fol. 98] Q. Right there, I believe you testified that Mr. H. H. Kaveler was named as chairman of the operators committee, is that any relation to you, as a witness?

A. That is "I."

Q. Did you serve as chairman of the Operators Committee during the entire time to which you have made reference?

A. I did.

Q. As chairman of the Operators Committee, did you have any contact with the work being carried on with the geologic committee, the engineering committee and the legal committee?

A. I did have frequent contact with the subcommittees and have personal knowledge of what it's—what they ultimately reported to the operating committee as their recommendation.

Q. You had occasion to follow through the investigation and study that those committees made?

A. That is true.

Q. I will ask you if, as a result of your general engineering knowledge and experience, if as a result of your company affiliation and if, as a result of your affiliation with the Operators Committee of the West Cement Medrano Pool, you feel that you are qualified as an engineer, as a reservoir engineer, to testify with respect to the West Cement Medrano Pool.

A. I feel I am qualified.

Q. Do you know to what extent information pertaining [fol. 99] to the pool has been available to your committee and to its subcommittees, meaning core data, electric logs, pressure information, geological maps, samples on the wells, etc.

A. The information that applies to the West Cement Medrano pool covers rather extensively the reservoir pressure history of the pool from the date of first production. It covers rather extensively core analyses data by virtue of the fact twenty-five of the wells drilled in the pool were cored. The cores were examined by geologists and core analyses were made reflecting the character of the sand. The information available on the pool is also made more complete by the fact that electric logs have been run on most of the wells. The net result is, that from engineering and conservation points of view, a very substantial amount of technical information is available from which to draw engineering and conservation conclusions. The information that has been developed in respect to the West Cement Medrano pool was a matter of substantial interest to all operators by virtue of the fact that the pool has been under the control and supervision of the Corporation Commission from early in its life. The Corporation Commission

has held frequent hearings in respect to allocation and conservation practices. The technical information to which I referred was a part of all of those hearings, so that the information on which the operators relied to derive their technical conclusions was, for the most part, a matter of public record by August, 1945.

[fol. 100] Q. Let me ask you, did your company of Phillips Petroleum Company take part in the hearings before this Commission to which you referred?

A. Phillips Petroleum Company did.

Q. As a result of those hearings, did Phillips Petroleum Company have access to this information to which you have made reference?

A. We had access to it. We made all of our information available to the operators from time to time in those hearings.

Q. Was the general information available in those hearings made available to you?

A. It was.

Q. State when this pool was first discovered, if you know?

A. Production from the West Cement Medrano pool was first had in October, 1936, by the production of gas from the Magnolia's Company Medrano lease, in the southwest quarter of section 36.

Q. When was oil first discovered in that pool?

A. Oil was not discovered in the Medrano common source of supply until approximately seven years, the date of the oil discovery being March, 1943, in the Stephens-Pierson No. 1 well in the southeast quarter of Section 35.

Q. How was the pool operated with respect to being operated as a gas pool or oil pool in the period of time that intervened between the drilling of the first gas well and the oil well.

A. For the seven years following the discovery of the first production the Medrano common source of supply was [fol. 101] operated, regulated and controlled as a gas field. It was not until sometime after oil production was had that the Medrano pool was considered to be other than solely a gas producing zone.

Q. Can you explain why it was that oil was not encoun-

tered in the drilling of the first well, why it was not known that this was an oil pool at that time?

A. The reason that oil was not discovered in the drilling of the first well and the reason oil was not discovered in the drilling of the wells that followed the drilling of the discovery well is clearly shown on the exhibit which is marked Exhibit No. 25. Exhibit No. 25 reflects, by colors, one of the outstanding characteristics of the West Cement Medrano pool. That outstanding characteristic is the fact that a substantial portion of the Medrano sand initially contained gas only and that is indicated on Exhibit No. 25 by that portion colored in yellow. The discovery well and many wells drilled immediately after the discovery well were drilled in that area of the pool which was underlain by gas only and I believe in the course of time approximately nineteen gas wells were drilled following the drilling of the discovery gas well.

Q. Then, when the oil was discovered—demonstrate on that exhibit, if you will, where it was located with respect to the gas zone of the pool.

A. Exhibit No. 25 contains a portion colored in red, which portion lies below the portion colored in yellow and [fol. 102] represents that portion of the Medrano sand which was the only portion that was underlain by oil initially. It was not until seven years had elapsed beyond the discovery of the first gas well that any operator drilled a well in that part of the pool which overlaid the oil horizon. It is a matter of some interest to observe that the Medrano pool is divided about fifty-fifty. Fifty per cent of it was underlain only by gas and fifty per cent of it was underlain by crude oil. The crude oil being heavier than gas is found only in the lower part of the structure. Exhibit No. 25 reflects another important fact to the West Cement Medrano pool and that important fact is that the oil and gas bearing horizon is very sharply tilted. Marked in Exhibit 25 is the figure 1817 feet vertical and the figure minus 4741, which is the subsea level, below which only water is found. That is to mean that from the topmost part of the Medrano sand, one must descend in the earth a distance of 1817 feet before the oil-water contact is encountered—the structure is very sharply dipping and that has lead to the accumulation of

the oil on the southern-most lowest structure point of the reservoir.

Q. Is there communication in the reservoir between the area marked in red on Exhibit No. 24 and the area shown in yellow?

A. The West Cement Medrano sand stone is of such character as to be permeable throughout the reservoir. That means that any substance that flows like oil and gas is capable of flowing is communicated, one with the other, [fol. 103] throughout the common source of supply. One may state the answer in another way, and that answer is this: that gas withdrawn from the gas bearing portion only causes not only a depletion of the gas, but the gas is communicated down to the oil zone so that the withdrawal of gas from gas wells can be evidenced in the oil zone by the movement of oil as a consequence of the pressure lowering due to gas. The same thing is true with respect to oil. Oil is removed and it can cause a response in the gas zone. The Medrano sand in that respect is a true common source of supply and one pool.

Q. Then, as I understand, the first wells drilled in the pool were drilled in that part of the pool overlying the gas zone which is shown on the cross-section by way of example and for that reason encountered gas only.

A. That is correct. And it was not until 1943 when wells were drilled farther down structure in the area overlying the oil zone that oil was discovered.

Q. That accounts for the manner in which the pool has been operated up there to that point.

A. That is true.

Q. Do you know how many wells have been drilled in the pool, first, let's see how many gas wells and how many oil wells.

A. To the present time, 21 wells have been drilled, which, from the date of their initial production, were classified as gas wells and thirty-four wells have been drilled, which, on the date of their initial completion were classified as oil [fol. 104] wells. At the present time, only 29 of the original 34 oil wells are classified under the rules of the Corporation Commission as oil wells, so that I may say at the present

time, in the field, a total of fifty-one Medrano wells have been drilled as producers, of which number 29 are now classified as oil wells and 28 are classified as gas wells under existing rules and regulations of the Corporation Commission.

Q. Do I understand you, certain of the wells drilled and completed as oil wells have been since classified as gas wells?

A. That is correct.

Q. Will you explain the reason for the change in that classification?

A. Under the present rules of the Corporation Commission, gas wells are—I beg your pardon—I should say "oil wells," are limited in their withdrawal to a basic daily allowable, which basic daily oil allowable is subject to a penalty in the proportion that the produced gas oil ratio exceeds the permissible limit of two thousand to one. The gas wells in the field are allocated a daily gas production, twenty-three million, six hundred thousand cubic feet, which gas allowable is allocated to the gas wells essentially on a potential basis, involving acreage as a factor. Of five oil wells which are now classified as gas wells have undergone an increase in gas oil ratio to the point where the ratio dictates that the well should be classified as gas wells. I would like to correct one statement. Anderson-Prichard [fol, 105] Hays No. I well was recently plugged back from the Medrano to the Noble-Olson, so that presently there are 54 pro*cued* Medrano sand wells.

Q. Mr. Kaveler, you have an opinion as to whether or not the drilling of 55 wells, of which 54 are yet Medrano wells, are sufficient to reasonably define by actual drilling operations the productive boundaries of the common source of supply?

A. In my opinion, the fifty-five wells which have been drilled to date, taking into consideration particularly of the uniform nature of the structure and of the sand, readily permit reasonable deductions concerning the outer boundary limits of production of both oil and gas in the common source of supply.

Q. I will ask you to refer to applicant's Exhibit No. 24, state whether nor not you have an opinion as to whether or not the line shown on that map as being the boundary

of the productive area of the zone reasonably reflects the boundary of the productive area of the zone.

A. I think the fine black ink line on Exhibit 24 reasonably defines the limit of production in the West Cement Medrano common source of supply.

Q. Now, is that conclusion based upon conjecture or based upon actual drilling operations and technical data?

A. It is based on actual drilling data gathered from fifty-five wells, upon the operating history and the examination of all technical data gathered during the thirteen years of [fol. 106] the life of this pool.

Q. Is it your opinion that a well drilled outside of that line would be productive of oil or gas from the Medrano sand.

A. I don't think a well drilled outside of the fine black ink line would be productive of Medrano oil or gas.

Q. I believe you testified a few moments ago, within that boundary there is, in your opinion, communication and that constitutes a single common source of supply of oil and gas.

A. That is my opinion.

Q. What is the nature of that formation with respect to being sandstone, limestone or any other type of geological formation?

A. The Medrano reservoir is sandstone and it is sandstone of unusually good and favorable characteristics from the standpoint of crude oil production. It may be classified certainly as one of the best oil sands and one of the best oil reservoirs in the continental United States. The average porosity of the sandstone is 16.5 per cent. The average permeability of the rock is high, that average permeability being three hundred millidarcies—the interstitial water content is reasonably low and has been estimated to be twenty per cent, the average thickness of the oil zone is 95 feet and the average thickness of the gas zone above it in the same common source of supply, sixty-six feet.

Q. Having in mind the percentage of porosity and the permeability about which you testified, does that cause you to form any opinion as to the mobility or migration of oil [fol. 107] and gas throughout the reservoir?

A. Oil and gas are substances that can flow like water flows. The reservoir rock is porous and permeable enough

so that substantial movement of oil and gas can occur in the Medrano sub-surface pool. If pressure differences are correct and that movement, in response to pressure differences is unusually marked in this pool, and would be unusually marked if large pressure differences were allowed to be created, which emphasizes the fact that the Medrano sand both as to that portion containing oil and that portion containing gas as a common pool, it is one puddle so-to-speak, it is a common source of supply.

Q. What is the energy factor found in that reservoir that causes oil so to move from the sand formation to the well bore?

A. There are two sources of production of crude oil. Crude oil does not produce itself from formations. Crude oil as it is sold to pipelines, or as it is found in stock tanks is not capable of flowing from a reservoir into a well and lifting itself to the surface. Crude oil is obtained from the sub-surface only through the agency of either gas, which nature placed in the reservoir along with the crude oil or crude oil is produced through the agency of water which is also commonly found associated with crude oil in reservoirs. In some pools, gas is responsible for part of the oil production and encroaching water is responsible for another amount—in addition, whether or not water is responsible for the production of crude oil depends upon [fol. 108] the body of water which is permeably connected in the common source of supply with the crude oil. All production history of the Medrano sandstone points conclusively to the fact that water is not moving into the oil bearing zone or encroachment of water is limited for some reason. We do not know the reason. We only know that the water encroachment is not very large. In fact, it is quite small. That leaves then natural gas either in that free zone or natural gas dissolved in the oil as the only agency in the Medrano pool which is capable of and responsible for the production of oil. Petroleum engineers summarize that statement by saying that the productive history of the Medrano pool establishes the fact that the pool is a gas-drive pool. It has a gas drive mechanism. The gas drive comes from what gas may be present in the gas cap in the gas zone or from the gas that may be dis-

solved in the oil. Crude oil can be produced from the West Cement Medrano zone only so long as there remains some pressures of natural gas.

Q. Is the energy in this pool exerted by the expansion of the gas cap or gas in solution with the oil. You said there were two possible mechanisms.

A. At the present time and up to the present time, the large volume of gas that is in the gas cap has had no opportunity to contribute substantially to the production of crude oil.

Q. Why is that?

A. The reason for that is, that the volume of productive [fol. 109] gas from the gas cap has been greatly in excess of the proportionality between gas and oil in that pool. At the present time, four times the volume of gas is being voided from the gas cap as the volume of oil being voided from the oil zone, or the gas wells are taking proportionately four times as much reservoir space as the oil. The consequence of that is that the pressure in the pool is highest in the oil zone and lowest in the gas zone because the gas is the lower pressure and the oil the higher and the general movement in the Medrano sand is movement of oil to gas. There is gas ——— in the oil for the most part that is a relatively low part in the oil which is responsible for the past production of crude oil. The 23 million cubic feet of gas having produced from the gas, the only wells produced are those wells in the oil producing zone, the gas will be collected and returned to the gas cap and attempt to do two things, first, to equalize as quickly as possible the pressure in the gas and oil zone that equalization will stop the movement of oil up hill, the second objective will be to create a condition of higher pressure by pressure maintenance so that the movement due to pressure will be down hill so that then the natural course of events may occur whereby the gas may act like a piston passing forward on the oil so that more oil may be recovered by that operation.

Q. Then, if I understand you, that gas cap energy is expanding gas cap against the oil and forcing it to the well bore of the well?

[fol. 110] A. That is correct and it's highly desirable if one is interested in increasing the ultimate recovery of oil.

Q. Gas in solution with the oil operates in just what manner?

A. It operates in the manner of a disposed gas cap drive, it does not operate with the efficiency that the forward moving gas will operate.

Commissioner Armstrong: You mean to say that if the pressure is built up in the gas area, and held back in the right area, then the pressure will permit the pressure out through the oil, through the oil wells?

A. That is correct.

Commissioner Armstrong: If that is not done and the pressure is released in the gas area, then the oil will greatly migrate up there?

A. That is true, Mr. Commissioner.

Commissioner Armstrong: And the oil that saturates the sand will eventually be lost?

A. Yes, if it is lent to the upward movement.

Mr. Williams continues with the witness:

Q. That will happen unless the pressure is built up?

A. That is true, and the oil moves up wetting the sand that naturally cut in oil and will result in the substantial amount.

Q. What happens to the gas in solution with that oil as the gas moves up-structure.

A. The gas in the oil will move uphill just as the oil does [fol. 111] from the pressure in the gas zone is lower than the pressure in the oil zone movement upward causes gas to be lowest to the oil zone, the result is in the recovery of oil by the loss of gas to the gas producing wells.

Q. You have made reference to pressures, Mr. Kaveler, do you know what the original pressures were in the area at the time of the discovery of gas, the virgin pressures of the zone?

A. The initial pressure in the Medrano sand 2130 pounds per square inch of subsea of 3470 feet, therein speaking in round numbers, the initial pressure was about 2100 pounds, that is the pressure existing as of March, 1936.

Q. Do you have information or know what the pressure was in the reservoir as of the date of discovery of oil?

A. In March, 1943, the pressure in the pool had fallen to

a level of about 1700 pounds representing a loss in pressure of some 430 pounds which may be taken roughly to be a loss of about 20 per cent of the gas energy up to the time that crude oil production was found.

Q. Do you know what the average pressure is at the present time?

A. The average pressure in the reservoir at the present time is about 1280 pounds in round numbers, about 1300 pounds per square inch, which may be taken to mean that about 800 pounds of pressure has been lost or about one-third original gas energy in the pool.

[fol. 112] Q. You say that the average pressure is approximately twelve to thirteen hundred pounds, do I understand you to say from that there is a differential of pressure existing in the pool?

A. At the present time there is a differential pressure between the oil zone and gas zone on the average of 250 pounds per square inch, that means that there is about 200 pounds per square inch in the oil zone and that means that there is still an upward movement from the oil zone to the gas zone.

Q. In ordinary oil parlance, what has been the difference of the method of operation in the pool?

A. I don't know about the oil field parlance, but we might say generally the pool has been operated by the practice of primary pressure depletion. The pool has been operated in a manner so as to rely only on an energy of a supply that has existed through compressed gas in gas zone and oil zone, you might say otherwise that a pool has been developed on a basis whereby gas wells have been on 160 acre spacing and oil wells on a forty acre pattern. The pool is a combined oil and gas pool.

Q. Was the pool from the first date of its discovery to the present date, been operated under pressure maintenance or repressuring or secondary recovery operation?

A. It is not now, nor has it ever been operated on any pressure maintenance or any secondary recovery basis the pool has been operated by primary pressure depletion practices only.

[fol. 113] Q. What is the method of operation as between leases as to unit operations?

A. Each separate lease in the pool has been operated as a separate lease in a competitive manner, subject to the rules and regulations of the Corporation Commission. There has been no unit operation in here since the pool was operated as a unit. The only pool operation that was a unitization of the leasehold to create drilling units of the size under the Commission's rules of the Corporation Commission.

Q. Unitization for gas repressuring or pressure maintenance?

A. No.

Q. At what rate do you say that the gas is being taken from the pool at the present time?

A. Approximately three million, six hundred thousand cubic feet of gas from the twenty-five wells classified as gas wells.

Q. At what rate is oil being produced from the pool? That is, at the present time?

A. 5200 barrels per day from 29 wells. The allowable is 200 barrels per day per well before penalty for gas-oil ratio.

Q. Does that change your answer as to the total oil withdrawal to the pool?

A. Not less than 5200 barrels per day.

Q. Have you made a study of the comparative volume of withdrawals from the pool in relation to the oil?

[fol. 114] A. I have, and under conditions existing at the present time the amount of source vented from the gas zone as to 23 million cubic feet of gas per day, is approximately four times the volume vented by the production of 5200 barrels per day of oil, the gas zone is therefore producing it proportionately in a ratio of about four to one.

Q. What will be the result there with respect to the pressure differentials that you testified awhile ago?

A. The result of a continuation of that practice will be the maintenance of a differential between the gas and oil area that pressure differential being in the direction of the gas area, the gas area always being the lower pressure, the result will be a continued migration of gas out of the oil in the oil area and migration in the oil area into the gas area, the result will be ultimately a very substantial loss of the ultimate recovery of oil.

Q. Have you caused a chart to be made under your supervision and direction that shows the things that you have been testifying about?

A. I have such a chart.

Q. Mr. Kaveler, I hand you an instrument the Reporter has marked as Exhibit No. 39, and I will ask you to state if you will state what that shows.

A. Exhibit 39 is a chart prepared under my direction and [fol. 115] simply reflects the statistical information that can be taken from the records of the Corporation Commission and shows on the bottom side that the years beginning 1936 up to 1946, on Exhibit 39, there are two sets of curves, one set near the top and it shows the number of producing wells, the dotted line shows the number of gas wells beginning in 1936, and increasing so in 1946 there are a total of 20 gas wells in the pool and the upper set of curves but the full line shows the number of oil wells and there is one in 1943 and the number increasing to the point it shows 34 oil wells in 1946. I previously pointed out that five of these wells had been reclassified and that there were actually 29 producing oil wells. The lower curve taken from the Commission records set out the production rate, the daily rate of production of gas and the oil in the pool and this expresses rate of production in terms of the amount of oil and gas originally present in the pool. For example, the Medrano pool obtained originally 97 million barrels of oil and in the year of 1944, the rate of production was just a little bit greater of two per cent of that volume, two per cent of 97 million barrels was the oil produced for the year 1946. That is the cross section of the curve in the lower right hand corner of the chart. The other set of curves shows the rate of gas production from the pool and those figures show that in the year 1940 during that year about four per cent of gas on lease was produced that year. 1941, [fol. 116] 14 per cent of the total gas in the pool was produced that year. In the year 1942 twenty per cent of the gas was produced that year, that is, to say in 1942 the rate of depletion was twenty per cent per year and after that high peak of production the Commission reduced the gas allowable to about 23 million cubic feet per day and since 1943 the rate of gas production has been about 7.8 per cent

of the total gas being produced. The gas being produced at 7.8 per cent at the present time and the oil is being produced at about two per cent. Exhibit 39 further reflects this; and it shows the gas being removed from the pool at a greater rate than the oil.

Q. In other words, approximately sixty per cent of the original gas in place has been produced and six point and some odd per cent has been produced?

A. If the rate was added up, the conclusion is at the present time sixty per cent of the gas originally present in the Medrano pool has been produced whereas at the present time, only 6.7 per cent of the oil in place has been produced, in other words, the depletion of gas has gone to the extent of about nine times greater than the oil.

Q. In terms of volumes of gas and oil, what is your estimate of original oil in place in the Medrano sand?

A. Originally there were 97 million barrels of oil in place, the gas in the pool to begin with was discovered 110 billion cubic feet.

[fol. 117] Q. To date, Mr. Kaveler, how much oil has been produced from the pool?

A. The production of oil has been about six million, six hundred and fifty thousand, which I arrived at.

Q. The point of gas produced to date is how much?

A. About sixty per cent of the amount originally present—it turns out it was sixty-six billion cubic feet, sixty per cent of the gas has been produced and only 6.7 per cent of the oil.

Chairman Bond: The Commission will have a ten minute recess.

[fol. 118] By Mr. Williams:

Q. Mr. Kaveler, you testified earlier in your testimony with respect to the oil that is moving from the oil zone into the gas zone as the result of the disproportionate production of gas from the gas zone, may we refer to that again please, sir, will that oil that is being moved from the oil zone into the gas zone be capable of production from the gas wells if that continues to occur?

A. *Nay* oil that is caused to move uphill in the direction of the gas wells will result in the loss, in possible recovery

of a very large fraction of that oil and there are two reasons for that. One reason is, that that portion of the Medrano sand which, in the beginning contained only gas, had no oil present; the oil that is in the oil zone is caused to move up into that dry gas zone will wet that gas sand much after the fashion that water will wet a sponge. The dry gas sand will soak up that oil and so hold it in the grains and between the grains of the dry gas sand that the oil will be unrecoverable. Engineers speak of that as production that is lost because of the wetting of the sand grains. There will be an additional loss to that, and that loss is occasioned by the fact that pushing the oil uphill which would tend to cause it to be produced from the gas wells, is a very inefficient process. Trying to produce oil from gas wells higher on the structure is as inefficient perhaps as holding a bottle of Coca Cola upright and simply remov- [fol. 119] ing the stopper, letting the gas bubble out of the Coca Cola and escape from the bottle. The result is, very little production of the Coca Cola from the bottle. The upward production or upward lifting of gas—I beg your pardon—the upward lifting of oil by gas is a very inefficient process. In order to get any substantial amount of liquid out of the bottle of Coca Cola, it is necessary to invert the bottle, turn the bottle upside down and the liquid will run out. The natural thing for liquid which is the heavier, to run out of the bottom from the bucket reservoir in which it is contained, so besides the loss and recovery of oil due to the wetting of sand grains, you will have less recovery of oil because attempting to produce uphill is much less efficient than producing oil downhill into wells that are lower structurally.

Q. Have you or has the Committee under your supervision made any estimate as to the volumes of gas and oil that can yet be produced by the primary pressure depletion methods of operation that you testified that are now being adopted in the field?

A. In answer to the question, I wish to recognize that estimates of what can be recovered from an oil and gas pool vary as between people who make the estimate. I shall attempt to answer the question in terms of figures which I think are reasonable. I have testified insofar as

the gas is concerned that there was in the pool at the beginning 110 billion cubic feet of gas. That was the amount there at the time of discovery,——

[fol. 120] Q. Not to interrupt your trend of thought—when you are on that point will you explain briefly the engineering process you go through with to arrive at such conclusion, what factors do you take into account?

A. That estimate can be readily obtained from the information gathered in drilling the fifty-two wells, the thickness of the sand underlying the pool can be readily estimated, the cores, which are pieces of sand that are cut out in the course of drilling can be analyzed to determine what fraction of the sandstone is void space and *a*capable of holding gas. In the language of the layman, that means what fraction of the sandstone is porous, so that from the thickness of the sand and the percentage of sand that has pore space one can determine the amount of space beneath each lease or the entire pool, which is capable of holding gas. Then, if you know the size of the container, if you know the size of the tank, then one need only measure the pressure of the gas. That can be readily determined from the well head pressure of the gas well or from the lowering of pressure gauges to the depth of the well. Then there are some minor corrections to make,—with the temperature at 6600 feet in the Cement Field is about 120 degrees Fahrenheit, and the other minor factors to be considered, but from the size of the container expressed in terms of acre feet of sand, from porosity, from reservoir pressure, from reservoir pressure temperature, it is a common procedure in engineering practice to compute the amount of gas in place either beneath the tract or within an entire pool. Such a [fol. 121] calculation can be made with the information that has been collected in the West Cement Medrano Pool and the calculation that is made indicates that about 110 billion cubic feet of gas occupied the gas zone in the entire pool at the time of discovery. I testified that the production of gas to date was about sixty-six billion cubic feet—that is the present condition. Now, in estimating the amount of gas that can be recovered from a gas zone such as exists in the West Cement Medrano, it is usual to consider that 95 per cent of the gas is recoverable, so that 110 billion

at 95 per cent, which is a high figure, but we will use it nonetheless, indicates that the ultimate recovery of gas will be 103.5 billion—will be the ultimate recovery—sixty-six has been recovered, which indicates that the gas reserve in the Medrano sand pool is about 37½ billion cubic feet.

Mr. Green: Correcting your mathematics, it's 104.5.

A. That 37½ billion cubic feet, if the present rate of production is maintained over near future years, should be produced in about ten years—eight, nine or ten years. Of course, production will fall off because pressure will be substantially depleted, but a ten year life on 37½ billion cubic feet is a reasonable estimate and at five cents per thousand,—if that is the price it is to be sold.

Commissioner Armstrong: You can figure that at seven? [fol. 122] A. Representing 8.8 value, about a million 875 thousand dollars, 8/8 value. One-eighth of that would be about 245 thousand dollars. Now, that is the picture insofar as gas is concerned. In respect to oil,——

By Mr. Williams:

Q. Before you get to the oil, I believe you made some remark in connection with that 95 per cent recovery, that is a high figure.

A. In order for gas to be salable it must be produced into pieplines. Pipelines carry gas only because the gas is compressed. The highest pressure in the pipeline is in the field end of the line. For that reason pipelines such as exist in the West Cement field have a pressure between five hundred and six hundred pounds per square inch. When the reservoir pressure falls less than the pipeline pressure the gas must be compressed,—the operator must install compressors to get the gas from the well into the pipeline at the well pressure because that compression determines mainly to what extent the gas pool can be depleted, so that while one uses the figure of 95 per cent recovery for the gas, it is based on the presumption that the cost of compressing the last billion cubic feet will be low and economic. It may be more near true that only 90 per cent or only 85 per cent of the gas will be ultimately recovered, but that depends on economic conditions in the future.

[fol. 123] Q. Then, in your opinion, the 95 per cent factor you used is a highly optomistic figure.

A. It is optomistic. It is good to use that figure optomistically so that the value of unit operation will be shown up at its greatest disadvantage. That is the worst picture for proposed unitization.

Q. Those are the figures operators normally use in order to determine whether or not they will spend millions of dollars in a project of this kind.

A. That is true.

Q. Explain your testimony in respect to the oil.

A. The amount of oil in Medrano sand can be estimated just as it can be estimated in any other oil pool by a well known procedure. The procedure involves a determination from core data and the electric logs, the thickness of the oil bearing section, determination of the porosity of the sand bearing oil and determination of the volumetric relationship between oil in the ground and oil in the stock tanks. Such calculation can be made from the data available from the drilling of 52 wells in the Medrano sandstone and an estimate based on the wells defined by engineering procedure indicates that initially there were 97 million barrels of oil in place. Now, the amount of that oil that is recoverable depends of course upon the manner in which the pool is produced. If the pool is produced in the practice of [fol. 124] primary pressure depletion the recovery will be lower than if the pool was produced under the practice of pressure maintenance, but we may, for the purpose, assume of that 97 million barrels that the ultimate recovery will be about 24 million barrels. That is about 25 per cent recovery.

Q. You mean, Mr. Witness, under present methods of operation in that field, that the operators will recover only approximately 25 per cent of the oil in place in the reservoir?

A. That is the percentage of recovery that is usually obtained from the so-called primary pressure depletion operation. In fact, it is higher than one usually gets.

Q. You mean by that in the ordinary field in Oklahoma, by primary depletion methods you get only that percentage of recovery?

A. That is about the range and it is the upper limit of the range that has been recovered.

Q. When the fields reach their economic limit of the oil obtained, that 75 per cent of the oil remains in the ground?

A. That is correct, 75 per cent of the oil that was originally there remains as residue and is unrecoverable at the time of abandonment of that field.

Q. And from your knowledge of this field, your engineering knowledge, is it your opinion that condition will exist with reference to the West Cement Medrano Pool when it [fol. 125] reached its economic limit under the present method of operation?

A. That is my opinion. I think that is a reasonable estimate of what might ultimately be recovered. I have testified that up to date there has been a recovery of 6.7 million barrels—have been recovered up to the 1st of October, 1946, so that the oil reserve that remains is about 17.3 million barrels and if $1.50 is the sale price of that oil the gross income from the sale of 17.3 at $1.52 is 26 million, three hundred thousand dollars and one-eighth of that is about three million, four hundred thousand dollars so that the reserve that remains through the present primary depletion practice, in the terms of gross income from the sale of this reserve, 1 million eight thousand dollars comes out of the well, about 23 million dollars of oil out of the well, the value of the oil therefore far exceeds the value of the gas and the ratio is about 13 to 1 in dollar value. The reserve life of the 17.3 million barrels of oil, I would estimate it would take about twenty years to produce that number of barrels of oil—perhaps twenty-five, for the reason that as the reservoir pressure is depleted by present production, practices the oil potential of the field won't be able to produce 5200 barrels per day and as the potention falls the pressure falls and it extends the life of the reserve.

Q. What is your estimate of the reserve life of the oil, that is, the time it will be required to produce the amount [fol. 126] of oil you say that will be produced?

A. I think the primary pressure depletion reserve that remains would have a minimum life of twenty years. It would take twenty years to get that amount of production,

might be longer—depends on how rapid the pressure decline is under the present methods of operation.

Q. Have you prepared or caused to be prepared, under your supervision, a graph or chart that shows the production decline curve under present methods of operation?

A. I have, and this is a copy of it.

Q. You say that instrument which has been marked Exhibit 40 is the chart to which you made reference?

A. It is.

Q. Will you explain briefly what that chart reflects, please, sir?

A. On that chart are plotted on the left axis or left hand side of the page, sand pressure in pounds per square inch. Across the bottom axis or the bottom of the page "cumulative recovery in millions of barrels." On there are two curves, a curve beginning at a point on the left axis marked Zero cumulative production and starting at a pressure point lying between sixteen hundred and two thousand pounds and running to the lower part of the graph at a point marked 24 million barrels cumulative production and lying at a curve terminating at about 100 pounds pressure. That curve in its initial course, shows the pressure decline [fol. 127] associated with the primary pressure depletion of the field and has indicated on it a point marked 'Jany. 1, 1947,' which shows a production of about 6.7 million barrels and the reservoir pressure somewhat less than 12 hundred pounds per square inch. The curve begins at Zero oil production and at a point marked '17 hundred pounds per square inch,' you will recall from the previous testimony that the reservoir pressure in the Medrano sandstone had fallen from its original value 2100 pounds down to 1700 pounds by the time of the first oil production, so this lower curve on Exhibit 40 charts the pressure history of the pool as oil has been produced up to January 1st, 1946, and shows that with the production of 6.7 million barrels of oil, the average reservoir pressure has fallen from about 1700 pounds down to about 1100 pounds. However, one may attempt to project the future of the Medrano sandstone, he may take an optomistic course or he may take a pessimistic course, one may be optomistic or one may be conservative. For the purpose of studying the feasibility of unitized

operation, one should take an optomistic view to the future of the sand under the present method of operation in order to put the merit of unit operation under its severest test, so that the Jany. 1, 1947 figure has been extended, shows gas-wells producing, indicate to Jany. 1, 1941 from Jany. 1, 1947, about 24 million barrels will have been the total [fol. 128] production at which time the reservoir pressure would have fallen to near its abandonment point or about one hundred pounds.

Q. That is your estimate of what will occur as shown by Exhibit 40 under primary competitive depletion methods of operation?

A. That is correct.

Q. Coming to the merits of the project proposed to the Commission, have you made any study of estimates of the additional recoveries through unitization and through gas injection?

A. Yes, sir; I have. I have come to the conclusion that if nothing else were done, nothing whatever were done except to close in the gas wells that are producing exclusively from this gas zone, if only that were done in order to accomplish conservation of the gas energy in the gas zone, so it might be retained and used for the production of the oil, if only the gas wells were shut in, I think then the ultimate recovery here, 24 million barrels, would be increased up to a figure of 28 or 29 million barrels. I think the pool would produce from four to five million more barrels of oil, simply ideal, as a result of being able to discontinue the production of gas from dry gas wells. Furthermore, if it were possible for the operators of this pool to not only discontinue production of gas from dry gas wells, but to pick up the gas that is produced from the oil from these oil wells and put it through a compresson station, re-inject it into the gas area so that the gas will proceed down struc- [fol. 129] ture and be available for more oil production or if in addition to picking up that gas well, gas the operators purchased outside gas so that the gas pressure in the gas zone could be maintained from gas from external sources, then, in my opinion, a very substantial increase in ultimate recovery in this pool could be had. Now, Exhibit 40 shows what can be expected from that type of

operation,—that is an operation which is dedicated to a pressure maintenance program and in order to put the difference pressure maintenance to its severest test, the second curve has been drawn in a manner to show minimum expectation,—that is the second curve which begins at the first curve marked "Jany. 1, 1947" and crosses up to the right showing a future pressure and production history under conditions where the gas zone has not produced but the addition of gas is added from external sources. That curve is drawn to determine at about one hundred pounds abandonment pressure, showing 38 million barrel ultimate recovery. Now the increase in recovery in Exhibit 40 attributes to unitization here about fourteen million barrels of oil. That is a conservative view of what pressure maintains. It is my personal opinion and belief that it is possible to maintain pressure by unitization, that the ultimate recovery of the Medrano field will be at least forty-eight million barrels in increase at least another twenty-four million barrels of oil for the benefit of the royalty owners. [fols. 130-131] Q. In other words, by reinjecting the gas and maintaining pressure in the reservoir, being able operators by the highest rate of efficiency, this pool will be able to produce twenty-four million barrels of oil of what it can produce?

A. That is my conclusion.

Floyd Green: That is without sacrificing the revenue from the gas?

A. The revenue will cease until the oil recovery is complete after a time that will be on hand a reserve, a quantity of gas that I know then be recovered it involves a matter of delaying the sale of gas until the greatest amount is recovered.

Commissioner Armstrong: And price increased?

A. Yes.

Mr. Williams: We offer Exhibits 39 and 40.

Chairman Bond: Received. The Commission will recess this case until the morning of December 23rd, at 10:00 o'clock, a. m.

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[fol. 132] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title Omitted]

RESPONSE AND PROTEST OF THE PALMER OIL CORPORATION—Filed December 23, 1946

Comes now the Palmer Oil Corporation and for its response and protest to the above application and petition filed in the above entitled and numbered cause, alleges and states:

First: That this respondent and protestant is a corporation regularly organized and existing under and by virtue of the laws of the State of Kansas and is duly authorized to transact and carry on business in the State of Oklahoma.

Second: That it is the owner of the seven-eighths (7/8ths) working interest in and to the oil and gas lease on and covering the

Southwest Quarter (SW¼) of Section Thirty-Five (35), Township Six (6) North, Range Ten (10) West, situated in Caddo County, Oklahoma,

with respect to all horizons to a depth of 6,000 feet, subject to an overriding royalty of one-eighth (1/8th) of the seven-[fol. 133] eighths (7/8ths) working interest oil and gas in favor of Gulf Oil Corporation; that on said oil and gas lease respondent and protestant has drilled three test wells to a depth sufficient to test the Medrano Sand formation and two of said wells have been completed as producing oil or gas wells from the Medrano Sand formation and have at all times since completion and are now being operated by The Palmer Oil Corporation.

Third: That the Medrano Sand formation has not from present exploration on said oil and gas lease been shown in any instance to be located or productive at a depth below 6,000 feet; that all of the oil and gas heretofore or now being produced from said Medrano Sand in and under said lease has been and is being produced from said formation at a depth less than 6,000 feet.

Fourth: That it protests and objects to the plan, peti-

tion and application filed herein for the following reasons, to-wit:

(a) That the proposed plan of unitization does not insofar as this respondent and protestant is concerned equitably apportion to it that portion of the total oil which may be produced from the proposed unitized area which may be reasonably expected to be produced from the oil and gas lease rights of respondent and protestant as a contribution to the unit

[fol. 134] total oil production from the Medrano Sand formation.

(b) That the unit plan does not provide for rearrangement of relative property values from time to time as conditions and findings warrant.

(c) That the proposed unit plan and the statutory Act (House Bill No. 339 of the 1945 Legislature of the State of Oklahoma) are invalid, illegal and of no force and effect for the reasons:

1. That they are in violation of the due process clauses in both the Fourteenth Amendment to the Constitution of the United States and Section 7, Article II of the Constitution of the State of Oklahoma.
2. That they deny to respondent and protestant the equal protection of laws guaranteed by the Fourteenth Amendment to the Constitution of the United States.
3. That they constitute and will effect the taking of the property of respondent and protestant without just compensation in violation of the Fifth Amendment to the Constitution of the United States and Section 23, Article II of the Consti-

[fol. 135] tution of the State of Oklahoma.

4. That they impair the obligation of the contracts of respondent and protestant in violation of Section 10, Article I of the Constitution of the United States and Section 15, Article II of the Constitution of the State of Oklahoma.

5. That they constitute a delegation of power in violation of Article IV, Section 1 of the Constitution of the State of Oklahoma.

(d) That said unit plan submitted in said application and petition is inequitable, unfair and unjust insofar as it has application to the legal and equitable rights and interests of this respondent and protestant.

(e) That said unit plan submitted and the application and petition for the creation of such proposed unit does not reflect facts justifying or permitting the approving of the proposed plan of unitization; that the proposed area for unitization is not one common source of supply.

Wherefore, Respondent and protestant respectfully prays this Honorable Commission to deny the application and petition filed herein, and for such other and further relief as may be proper.

[fol. 136] The Palmer Oil Corporation, Respondent and Protestant. By Tom Palmer /s/ President.
Adams, Jones and Robinson. By Mark H. Adams /s/ Attorneys for Respondent and Protestant.
Address of Attorneys: 1008 Brown Building, Wichita 2, Kansas.

[File endorsement omitted.]

[fol. 137] Before the Corporation Commission of the State of Oklahoma

[Title Omitted]

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Transcript of Hearing—December 23, 1946

Colloquy

(Pursuant to recess on December 9, 1946, the hearing was resumed at 10:00 o'clock a.m. December 23, 1946, parties

present and presiding as heretofore, and the following further proceedings were had:)

Chairman Bond: The Commission has before it this morning CD 1308, the petition for creation of the West Cement Medrano unit. Are we ready to resume the hearing?

Mr. Williams: The applicant is ready to resume.

Chairman Bond: You may proceed in No. CD 1308.

Mr. Green: We have some exhibits to put in at this time, and if it is all right with everybody I will offer them in the record now.

Chairman Bond: You may proceed.

Mr. Charles E. Jones: My partner in the last hearing represented the Palmer Oil Company, whose name is Mark H. Adams; because of unexpected illness in his family he [fol. 138] is unable to be here today. My name is Charles E. Jones, partner with him, and I would like to be present in the hearing on behalf of that client.

Chairman Bond: Very well.

Mr. Jones: I have a response of our client that is proposed to be filed. If any of the parties desire copies, if they will furnish me their name and address we will furnish you those copies at a later date. I do have the ones to be filed here today.

Chairman Bond: Let the response be filed. Do you desire to read it to the Commission or not?

Mr. Jones: I am not sure that I know whether it is necessary.

Mr. Williams: I believe, just glancing over it, it is in substance and contains the things Mr. Adams stated into the record at the opening of the hearing.

Chairman Bond: Very well.

Mr. Jones: I am quite sure that is correct.

Mr. Green: We offer Exhibit No. 41, being the response and protest filed by the Palmer Oil Corporation.

As Exhibit No. 42 I offer a letter signed by E. A. Fariss, of Willingham & Fariss, Apco Tower, Oklahoma City, Oklahoma, in which they advise that they are trustees for the estate of Charles B. Cooke, one of the royalty owners, and that they agree and concur in the proposed plan to unitize the field.

Exhibit No. 43, which I want to offer in evidence, is a letter signed by M. B. Ettlinger, in which he sets out the various interests owned by him in the pool, and in which he [fol. 139] agrees that the application might be granted and the pool unitized.

I would like to offer Exhibit No. 44, a letter signed by Frank Worrell, in which he states he is a royalty owner and that he is in favor of the proposed plan of unitization.

I also offer in evidence Exhibit No. 45, letter signed by J. A. Heenan, of Oklahoma City, in which he states he is a royalty owner and he is in favor of the proposed unitization plan. All of these letters are addressed to the Corporation Commission.

I offer in evidence as Exhibit No. 46, letter signed by the Ardie Oil & Gas Company, by R. D. Jones, in which that company states that they are in favor of the proposed plan of unitization.

I offer in evidence as Exhibit No. 47 a letter signed by R. D. Jones, of Oklahoma City, dated December 17, 1946, in which he states that he is an owner of royalty interests in the pool, and that he is in favor of the proposed plan of unitization.

I offer in evidence as Exhibit No. 48 a letter signed by Clark H. Boyles, dated December 12, 1946, addressed to the Chairman of the Corporation Commission, in which he states he owns royalty interests under certain leases owned by the Magnolia and others, and that he is in favor of the proposed plan of unitization.

I would like to offer as Exhibit No. 49 a letter signed by [fol. 140] R. M. Franks of Oklahoma City, the letter being dated December 12, 1946, in which he states that he is the owner of certain royalty interests in the proposed unit area, and that he is in favor of the proposed plan of unitization.

I would like to offer in evidence as Exhibit No. 50, letter signed by H. C. Hill, of Norman, Oklahoma, dated December 11, 1946, in which he states that he is a small royalty owner of certain interests within the proposed area, and that he is for the proposed plan of unitization.

I offer in evidence as Exhibit No. 51, a letter signed by Roy M. Smith, dated November 5, 1946, addressed to the Corporation Commission, which letter states that he is a

royalty owner under the Phillips-Garner lease and under the Anderson-Prichard-Pickard lease, and that he is in favor of the proposed plan of unitization.

These exhibits are numbered 41 to 51, both inclusive.

Chairman Bond: They may be received.

(Exhibits numbered 41 to 51, both inclusive, are made a part of the record and are set out in proper numerical order in the exhibit binder accompanying and made a part of this record.)

Mr. Brown: While on exhibits, I have a portion of Exhibit No. 37, which is the unsupplied portion of the interests that are held by Anderson-Prichard, which were to be supplied as part of Exhibit 37; and I have that here this [fol. 141] morning. I would like to have that attached as part of Exhibit No. 37, Anderson-Prichard lease and title papers.

Chairman Bond: Very well. That is part of Exhibit 37?

Mr. Brown: That is part of Exhibit 37.

Mr. Williams: May it please the Commission, we have Mr. Huff here as a reporter in aid of the Commission's reporters. I believe it is customary to swear these reporters.

Chairman Bond: Very well.

(The reporter was sworn.)

H. H. Kaveler, recalled, testified further as follows:

Direct examination.

By Mr. Williams:

Q. Following tradition, I suppose the first question to be asked is, are you the same Mr. H. H. Kaveler who was on the stand at the time the hearing was recessed on December 9th?

A. I am.

Q. You were sworn at that time?

A. Yes, sir.

Q. Mr. Kaveler, I believe at the conclusion of that hear-

ing you were testifying with respect to additional recoveries to be obtained through unitization and gas injection in the West Cement Field: I would like at this time to go into that matter further. What methods of operation are available to the operators as contemplated under unitization as here proposed to the Commission. Taking them up [fol. 142] in order of the possible application to the pool, I believe selection production would be the first.

A. If the Medrano sand were unitized there would be available to the operation of that pool many improved methods of operation that are not now possible of application. One of the first things, in fact, the first thing that would occur in the event of a unit operation would be to close in the dry gas wells, those wells in the pool which produce gas only and no oil. That method of operation might be referred to as the method of selection production. The dry wells produce no oil, but they do rob the reservoir of the gas, which is the agency that does produce the oil. So that obviously the thing to do after the unit is formed, if it is formed, is to cease the production of those wells.

Now, the next method of operation that would be available to the unit operation would be the method of reinjecting produced gas for the purpose of maintaining the reservoir pressure, and for the purpose of restoring to the reservoir the energy which is responsible for the production of the oil. That method of operation involves the collection of gas produced with the oil from the oil wells, gathering the gas and returning it to the reservoir through one of these shut down gas wells. That method of operation would result in a very substantial increase in the amount of oil recovery.

A third method of operation that would be available in [fol. 143] the event of unitization would be the method of injecting water on the lower side of the field and the water flooding the oil into the producing wells. That is the method of operation which would follow logically in later years after the gas injection method of operation had been carried to a point near depletion.

Another type of operation that would be available in the event the unit is formed would be that producing wells could be drilled without regard to property lines. In a

pool like the West Cement Medrano pool, the oil sand is narrow, and the choice of location of producing wells is very important. In the absence of unitization, such as the operation is now carried on, there are certain restrictions to drilling wells in respect to the property lines. Many times those restrictions prevent the producing oil wells being drilled in the most efficient location or the most advantageous location from an oil recovery standpoint. If the unit is formed, it is contemplated that at least seven wells will be drilled into the oil bearing section of the Medrano sand.

Q. Do you mean by that additional drilling above those that have now been drilled and completed?

A. Yes, sir; seven additional wells beyond those wells that have now been drilled and completed. Those seven wells should be drilled in respect to the nature of the oil field, and will not have to be drilled with respect to any property lines. It is obvious that the drilling of producing wells in a manner so as to provide additional producing [fol. 144] reservoir is one strongly advantageous in unit operation.

I should think that a unitized operation that involves the injection of gas produced with the oil pressure maintained by gas injection would result in the increased recovery of at least 20 million barrels as a minimum, and if one takes our optimistic view of the situation it would be reasonable to expect that an additional 40 million barrels of oil may be recovered as the result of being able to apply more efficient methods of operation.

Q. You have outlined briefly these different methods of operation. May we refer to these now more in detail? You mentioned in the selection production that gas wells would be shut in. What would be the situation with respect to high gas-oil ratio wells?

A. Any oil well that developed a high gas-oil ratio would also be shut in, because such high gas-oil ratio oil wells are almost as detrimental in improving the reservoir energy as is a dry gas well.

Q. By shutting in the gas wells and the high gas-oil ratio wells, what would become of the gas, or what use would be made of it?

A. The gas remaining in the reservoir would serve the

purpose of forcing the oil into the oil producing wells lower on the structure.

Q. What is the value of that gas, Mr. Kaveler, as fuel, or as a marketable product, as compared with the value for [fol. 145] reservoir energy purposes?

A. The value as natural gas as a salable market for fuel is but a very small fraction of the value of the gas as an agency for producing oil. The reason for that is that a barrel of crude oil has a much higher market value than does 1000 cubic feet of natural gas. From the standpoint of the owners of the West Cement pool, both royalty and working interests, the unitization of this pool and the injection of gas produced, rather than the sale of the gas produced, does not represent a loss in income from the sale of gas for the reason that in 10 or 15 years about 80 per cent of the gas in the pool will be available for pipe line sale. The gas will be sold ultimately. But in the meantime it will be kept in the pool, or kept in the Medrano sand for the purpose of producing oil. When the oil producing operation is over then the gas in the Medrano sand will be available for pipe line sale. It can then be sold without any loss in recoverable oil.

Q. Mr. Kaveler, do you have before you or in your files the figures showing the value of the market price of the gas yet remaining in the sand, as compared with the value in dollars and cents of the oil to be recovered?

A. At the time of my previous testimony I think I showed that the value of the gas in the Medrano sand at 5 cents per 1000 cubic feet is about $1,800,000, whereas the value of the oil remaining is in excess of $26,000,000. On that basis, [fol. 146] one might say that the oil that could be recovered from the Medrano sand is at least thirteen times as much in value as is the gas. That comparison of $26,000,000 value of the oil to $1,800,000 value for the gas is based upon ultimate recovery of only 24,000,000 barrels of oil. Now, the 24,000,000 barrels of oil is but 25 per cent recovery. That is the amount of recovery we might expect if the pool continues its present type of operation. But if the pool were unitized and the gas were injected into the ground we could expect that $24,000,000, or 25 per cent recovery, would be twice as great. That would lead to the conclusion that

the oil would have a value of about $52,000,000, which places it in the ratio of about 26 times as valuable as the gas.

Q. This 25 per cent recovery figure to which you refer, is that low as applied to the West Cement Field, or is that a figure that is common to pools generally?

A. That is the percentage recovery that is usually had from sandstone pools where gas is the only available agency for production. Technically, you can refer to that as 25 per cent recovery of oil in place is the recovery usually had by pressure depletion methods of operation. That is not low. That is the recovery that the industry usually gets from these oil pools in the absence of unitized operation.

Q. In other words, when by competitive methods the operations are complete and the pool is rated for abandonment, 75 per cent of the oil in place is left in the ground?

[fol. 147] A. That is correct.

Q. That is the oil you are striving to get through this method of operation?

A. We are striving to get a large part of that 75 per cent. There will always be some oil that cannot be recovered, no matter how efficiently we operate. A part of the oil is always held by the sandstone so firmly it cannot be recovered. In my opinion a unitized operation would permit an increased recovery that would bring the ultimate recovery to at least 50 per cent of the oil in place. In other words, we might expect a unit operation to double the ultimate oil recovery from the Medrano sandstone.

Q. Mr. Kaveler, on the other day of this hearing you testified under competitive methods of production of the gas wells and the high ratio wells, that is, withdrawal of the gas from the higher portion of the structure, caused a pressure differential between the gas zone and the oil zone, causing the oil to migrate into the gas sand and the loss that would result from that operation. Will you now explain how selection production of the wells will reverse that situation, or what effect it will have upon that situation?

A. Exhibit No. 25 is a cross section of the Medrano sandstone. It has a colored portion in yellow, which represents part of the Medrano sandstone that is filled only with gas; no oil originally. It has colored a portion in red, which

represents that portion of the Medrano sandstone that was [fol. 148] originally filled with oil and some gas, and then colored in green it shows the location where the sandstone is filled with water only. What has been going on in the Medrano sandstone from its discovery up to date is production of excessive amounts of gas from that portion of the sandstone which is filled only with gas. Everyone can understand that if gas is removed from the pool that there will result a reduction in pressure, and everyone will understand that if oil is removed from the pool there will result a reduction in pressure of the oil. The important thing is to keep the pressure in the gas area at the same level and the same value as the pressure in the oil area. If the pressure in the gas area becomes less than the higher pressure in the oil zone will cause the oil to move into the gas and that results in substantial waste.

Unit operation would permit the closing in of the gas wells. If production of gas from these gas wells continues, and the production of crude oil continues, there will result a higher pressure in the gas area and a lower pressure in the oil area, and the consequence is the gas will then move down hill, forcing the oil downward to the producing wells. There is a very substantial difference between the movement of gas down hill forcing the oil ahead of it and the situation where the oil bubbles up into the gas zone. The substantial difference is when gas causes a movement downward, pushing the oil ahead of it, a very marked substantial increase in oil recovery. If the [fol. 149] other situation prevails, whereby oil is permitted to move up into the dry gas, a substantial amount of recoverable oil is lost. Wtih selection production then it will permit these gas wells to be closed in. The gas wells will, in my opinion, just shutting in those gas wells alone will result in an increased recovery of from 5 to 10 million barrels over what would have been recovered had those gas wells not been shut in.

Q. You mentioned the drilling of additional wells. Where would those wells be drilled?

A. The wells drilled under unit operation would all be drilled near the extreme lower limit of the oil, as near to the water-oil contact as possible, for the simple reason the

lower down in the container you can place the siphon, the more efficiently the siphon will work. It really is nothing but a siphon; it is a hose you put down into the container for the purpose of lifting the oil.

Q. Does oil naturally run uphill or downhill?

A. Everything naturally runs downhill, and oil runs downhill more efficiently than it runs uphill.

Q. Then it is your opinion under a method of operation which aids the downhill flow of oil would be more efficient than a method of operation that caused it to bubble uphill, I believe was your expression.

A. Much more efficiently.

Q. You testified when this oil found its way into the gas [fol. 150] sand, waste would result, I believe was your language. Why cannot oil be produced from those gas wells sand?

A. It cannot be produced from gas wells for the reason that the gas sand colored in yellow on Exhibit 25 is a dry gas sand. It has little or practically no oil in it now. That is a dry gas sand, and if oil is caused to move uphill to these gas wells, that dry gas sand will act very much like a sponge; it will soak up a large fraction of that oil in such a manner that the wetting of the dry gas sand will cause that wet oil to be unrecoverable. The sand holds it in such a manner it cannot be recovered.

By Commr. Armstrong:

Q. Is such procedure in the oil field going on gradually at this time?

A. That is correct; it has gone on from the production in this field due to circumstances that were imposed.

By Mr. Williams:

Q. Mr. Kaveler, in your testimony you made reference to the injection of gas as a method of operation in contemplation under this program of unitization. Explain how that will work.

A. The injection of gas will simply be a step farther beyond the matter of selection production, and that operation will work in this manner. The gas wells will be shut in, the crude oil will be produced from the wells that are

located in the oil area of the field. The gas that is produced from the crude oil wells with the oil from the oil wells will be gathered up and put through a compressor station and [fol. 131] re-injected into the ground in the dry gas area. The result of the taking of the gas from the oil wells and returning the gas to the gas wells will be that the pressure in the reservoir will be built up and increased in that gas area over and above that in the oil area, with the result that the gas will move downward, pushing the oil ahead of it into the producing oil wells. That is the reason why any further drilling in this field ought to be in such a manner as to locate the wells in the lowest structural position, that is, in the lowest place in the oil zone.

Q. In other words, gas injection from a functional standpoint operates in the reservoir the same as your selection production, except to lend additional aid to the gas in the gas cap, is that correct?

A. That is a correct statement.

Q. Through the injection of gas, Mr. Kaveler, what percentage of recovery do you feel can be obtained?

A. In my opinion, if gas is injected into the Medrano sand in a unit operation, the ultimate recovery of oil will be at least 50 per cent of the oil in place, or that 50 per cent will be twice the amount of oil that would be obtained if the present method of operation were continued. With the extremely favorable circumstances concerning this pool would lead me to the prediction that the ultimate recovery by unitization and gas injection will be even greater than 50 per cent of the oil in place, or will be greater than twice [fol. 152] the normal expectation if the present method of operation is continued.

Q. Mr. Kaveler, you spoke of re-injecting the gas that is produced from the oil wells into the gas cap. Will that gas, in your opinion, be sufficient for that purpose?

A. It may not be. We will have to see. But if it is not sufficient for the purpose it will be economical to purchase gas from some outside sources. There are other gas reservoirs in the West Cement Field, the Merchants sand and other sands from which the Medrano unit operation can produce gas for injection into the Medrano sand, if the Medrano gas is not large enough in quantity to permit

an efficient pressure maintenance operation. In my opinion the operators would purchase outside gas in the amount the Medrano gas is found to be insufficient.

Q. Do you have any opinion, Mr. Kaveler, as to whether or not the Medrano gas will be sufficient, or whether it will be necessary to buy outside makeup gas?

A. I think the Medrano gas will be sufficient for the first five or six years. It may be later on a small quantity of outside gas will have to be purchased.

Q. Tell me, Mr. Kaveler, is this matter of gas injection an econ8mical program wherein the operators save operators' costs, or does it cost money?

A. Pressure maintenance operations require the construction of equipment—the installation of equipment for the purpose of pumping the gas back into the ground. For [fol. 153] example, in the West Cement Medrano sand the gas produced with the oil in the oil wells will be available on the surface of the ground at about 20 pounds pressure. It will require about 1200 pounds of pressure to get the gas back into the reservoir, so that the operators will have to construct a compressor station for the purpose of increasing the pressure on the gas from 20 pounds to 1200 pounds.

My offhand guess is that the operators of the West Cement Medrano unit will have to invest around $2,000,000 for the purpose of installing the equipment that is necessary to carry on the gas injection operation. So that unitization and pressure maintenance is not a device whereby the operators escape the costs. Unitization and pressure maintenance is a means whereby the field may be more efficiently operated as the result of making some additional investments on the part of the working interest owners.

Q. Mr. Kaveler, you used the word "guess." Is that a guess, or has your committee given consideration to the possible costs involved in this program?

A. I used the word "guess" in the sense it meant an estimate.

Q. Has your committee given consideration to that matter?

A. Yes; the engineering committee has considered that matter, and have estimated that an investment of about

$2,000,000 in gas injection facilities will be required on the part of the operators.

Q. I believe you testified there would be the drilling of at least seven additional wells.

A. The present contemplation is that at least seven [fol. 154] additional wells will be drilled in the Medrano Pool.

Q. Mr. Kaveler, is there any relationship between property lines on the surface and the structural conditions to be found in the subsurface?

A. No; there is none. There is no relationship between geography, which is an accounting of the surface conditions of the earth, no relationship between that and what exists in the subsurface. There are no fence lines in the Medrano sand, even though there be fence lines on the surface of the ground.

Q. Is it good engineering practice to drill wells with regard to property lines and fence lines on the surface, or with regard to underlying structural conditions?

A. The only way in which an oil pool can be efficiently operated is to permit the development of that pool only with respect to the nature of the pool itself. That would dictate, in the case of the Medrano pool, that wells should be drilled in the oil section, and that oil production should be taken only from such wells. The lease lines on the surface of the earth are not drawn in respect to subsurface conditions, and for that reason the best engineering practice is to follow reservoir conditions, rather than surface conditions.

Q. Mr. Kaveler, you pointed out on Exhibit 25 the cross section where the wells would be located. I wonder if you would refer to Exhibit No. 24, being a map of the area, and point out where these additional wells should and would be drilled.

[fol. 155] A. Exhibit 24 is a map of the surface area, and the seven additional wells that are contemplated being drilled would be drilled along on what on Exhibit 24 appears to be the southern boundary, or southern limit of the Medrano source of supply. Generally speaking, the oil lies in the southermost quarter of the field, and the gas lies in the northermost three-quarters of the field.

So that the wells that would be drilled would be drilled along the southern boundary, which is the black pencil line that runs along from Section 29 to Section 33, and Section 34 on southeastward. I mean the best oil wells in the field are those that are drilled on the extreme southern limits.

Q. Mr. Kaveler, by what means would this gas be injected into the reservoir? That is, in respect to the present wells and the wells to be drilled for that purpose, what would be used?

A. There are already enough gas wells in the field to give sufficient means for returning the gas to the Medrano sand, and therefore we need drill no more wells for the purpose of injecting gas.

Q. Mr. Kaveler, have any estimates been made as to volumetric withdrawal of gas at the present time in relation to the volumetric withdrawal of oil?

A. Yes, sir; and those estimates are not difficult to make. At the present time there is being taken daily about 23½ million cubic feet of gas from the gas area; say 23½ mil- [fol. 156] lion cubic feet daily on an average. That is allowable for gas to the gas wells. There is being produced from the oil section near 5200 barrels per day. Now, it is easy to compute how much space in the ground is occupied by the 23 million cubic feet of gas, and how much space in the ground is occupied by the 5200 barrels of oil, and the result is the conclusion that four times as much gas is being taken out of the ground daily as is of oil being taken out. In other words, we might say this: that the volumetric withdrawal of gas is four times as great as is the volumetric withdrawal of oil daily. The consequence of that is that now, and always in the past, the pressure in the gas has been lower than the pressure in the oil. The pressure in the gas has been lower than the pressure in the oil because, disproportionately more gas is being taken from the field than oil.

Q. Assuming that the pool is not unitized and the methods of operation with respect to which you have testified cannot be adopted, can this present situation with respect to the excessive withdrawals of gas continue if we are to have conservation in the West Cement Pool?

A. If the pool is not unitized, then certainly the amount of gas production daily from that field should be very drastically reduced. It would be my recommendation, in that event, that the allowable gas from the Medrano sand be reduced at least to one-fourth of what it is now. The allowable of gas should be something near 5 million cubic [fol. 157] feet per day from the gas wells. The basis for that recommendation would be that some step must be taken to bring the oil zone and gas zone into pressure balance, and that can be accomplished only by taking proportionately the same volume of gas from the field as oil, and that would result in a reduction of gas allowable to at least 5 million cubic feet.

Beyond that point, as an engineer, my recommendation would be that the gas wells should be closed in. If this field is not unitized the gas wells should be closed in. Of course, the question of whether or not they can be closed in is a legal question and beyond my province, but from purely an engineering point of view very markedly the dry gas taken from those gas wells causes a reduction in the amount of oil that will ultimately be recovered. In that sense waste occurs as the result of the production of any of that dry gas out of the dry gas wells.

By Commr. Armstrong:

Q. Is there any other method you can use in conserving this gas and using the gas to produce oil and compensate the owners of the gas, except to unitize the pool?

A. Mr. Commissioner, the only way in which gas could be put back into the ground in a manner to be fair to everyone would be to unitize the pool, for this reason: That if gas were injected into the Sunray Dixon 1-A well, there is no reason why that gas could not ultimately be used to produce out of Phillips No. 1 Oaks. There is no fence in the Medrano sand. That oil and gas wanders about in the sand just in the manner that wild animals wander about on the surface of the earth. So, unless there is a [fol. 158] consolidation of leases of Sunray-Dixon 1-A and Phillips No. 1 Oaks putting the two leases together, there will be uncertainty as to what happens to that gas that would be put into this one lease. Then the other factor

is, you could not inject gas into the Phillips No. 1 Oaks well without some fear the injected gas would cause still more oil to be produced out of this Sunray-Dixon. So, as long as you have property lines, this matter of returning gas to the ground to maintain pressure just cannot be worked out from the standpoint of fairness and equity to everybody. The only way equity can be done is to make one lease out of the pool.

By Mr. Williams:

Q. What is the natural unit; a lease, or a pool?

A. The natural unit is the pool itself, the entire pool.

Q. You say there are no fences underground to divide the pool as between properties. This energy factor about which you talked, about gas, is that a factor unique to each property, or is that a factor common to the pool as a whole?

A. Well, the gas energy that produces the oil is a characteristic quite probably of the entire pool. The problem in non-unitized operations, such as the operation that is occurring in the West Cement Pool now, the problem is to divide the gas and that energy equitably between all of the parties. The energy is being divided under the rules and regulations of the Corporation Commission. The question of dividing up your property for the [fol. 159] purpose of forming a unit is therefore not unique in respect to the fact the division must be made. A division goes on out there every day. You are dividing it up among yourselves. Unitization is different from the present method of operation in that the unitization brings out a division of interest in the pool owners for that final and permanent division.

Q. Mr. Kaveler, is this a correct statement; that under competitive methods of operation the lessees and their royalty owners are attempting to divide a small part of the oil and gas underground, producing it inefficiently, whereas, under unitization your unit would recover the greatest ultimate recovery of oil and then divide it when they get it to the surface?

A. That is a correct statement, Mr. Williams. Under the present method of operation the oil is being divided

up by competitive operations, and the division takes place in the subsurface in the sand itself. Unit operation differs from that in that the dividing up of the oil occurs after the oil is produced, so that the result is a much greater amount of oil to be divided up among everyone.

Q. Mr. Kaveler, if the Medrano sand of the West Cement Pool is a common source of supply, and I believe you testified it was, and if the energy in that reservoir is common, is it logical or illogical, from an engineering standpoint, to say that the pool should be produced through some common method of operation, or unit operations, as you have referred to them?

[fol. 160] A. It is logical to conclude that the pool should be operated as a unit consistent with its nature.

Q. Is unitization and the injection of gas a new fad or untried brainstorm of some engineer, or is it an accepted method of operation in industry?

A. Unitization is not new. I think that unitization, as we know it today, was first given thought to as early as 1924. One might say, then, that for 22 years the idea of unit operation has been before the American petroleum industry. There are now, after those 22 years, many unit operations. There are also many unit operations that have been carried through a 10 to 15 year life to the point where there need be no guess work about the advantage of unitized operation in terms of increased ultimate recovery. Their operation of the south Burbank field has been a study as an example of the benefits of unit operations here in the state of Oklahoma.

Q. Where is that pool located, Mr. Kaveler?

A. The old south Burbank pool is located in southern Osage County, Oklahoma.

Q. Is that a pool of which you have personal knowledge?

A. It is.

Q. Does your company have interests in that pool?

A. It does.

Q. Explain briefly for the record and for the Commission some of the facts with respect to that unit operation and [fol. 161] the benefits that have been obtained.

Mr. Jones: For the purpose of the record only, I would like to object to that question as being immaterial for the present proceedings.

Mr. Bond: Same objection on our behalf.

Chairman Bond: It will be sustained, unless it be shown there is a similarity of operations and similarity of conditions.

By Mr. Williams:

Q. Mr. Kaveler, from your knowledge of the Burbank pool, do you have an opinion as to whether or not the conditions found in the Burbank pool are representative of what you might expect to obtain from the West Cement Pool?

A. The West Cement Pool and the South Burbank Pool are comparable in many respects. The two pools are producing from sandstone with similar characteristics, both pools are gas drive pools, so that I think it is logical to state that for the purpose of examining the benefits of unit operation, the South Burbank Pool is quite comparable to the West Cement Medrano Pool.

Chairman Bond: The witness may testify, and exceptions allowed.

By Mr. Williams:

Q. All right sir, will you then explain the details of the Burbank Pool and the possibility of benefits to be obtained, also, in view of the foundation laid, go along and explain the relative comparison of that pool with the Cement Pool.

A. The South Burbank Pool was discovered in 1935, and [fol. 162] wells were drilled on 20 acre spacing; 20 acres per well. Unit operation commenced shortly after the first well was drilled, in about June, 1935, and because the field was unitized it was possible to get a wider spacing program, 20 acres. The pool contained about 100 wells, 110 wells, and up to the present time, after approximately 11 years, 11 years of operations, their production has been obtained at about 12,000 barrels per acre. The South Burbank field has had produced gas returned to it throughout its entire life. Beginning early in 1936 the gas produced with the oil has been returned to the producing formation.

By Commr. Weems:

Q. Did that condition exist from the very start of the field?

A. That condition existed from the start of the field.

By Mr. Williams:

Q. Is there any pool in the immediate area of like condition with which to compare the results of unitization with those of competitive operations?

A. The value of citing the South Burbank Field as an example of unitization is that the South Burbank Field lies immediately near the North Burbank Field. Now, the two pools are the same in every respect, except in respect to size. The North Burbank Pool is larger in area. Its wells are drilled on 10 acre spacing and it has approximately 1000 wells, so the North Burbank Field is about 10,000 acres in area, and the South Burbank Field is about 2000 acres in area. The only difference between the two [fol. 163] pools is one is five times larger than the other one.

The North Burbank Pool was discovered in 1922—in 1922, and wells of great potentiality were drilled, and that was the period, you know, when the Osage Indians became fabulously rich due to the very fine character of those wells. One thousand wells were drilled on 10 acre spacing, twice as many wells per acre as in the South Burbank Pool. The pool is now 24 years old—24 years.

Mr. Jones: I object to the witness constantly repeating for emphasis.

Chairman Bond: Overruled.

A. And the recovery at the present time is about 12,000 barrels per acre. It may be a little bit less. I am relying on my memory for the figures. I could get more positive figures.

By Commr. Weems:

Q. The North Burbank Pool, has that gas been re-injected also from the start?

A. The difference between the two fields, is that in the North Burbank Pool gas injection, putting gas back into

the ground, did not start in large scale until the year 1939 or 1940, before a large scale operation got under way.

In 1939, when people saw what was happening to the South Burbank Field, there was a belated attempt to get gas injection going. It has not been very helpful, for the reason that the North Burbank Field had reached the age of decline where gas injection could no longer help it. [fol. 164] The value of unit operation is obvious when one compares South Burbank unit operation and North Burbank non-unit operation.

By Mr. Williams:

Q. Let's see if I understand your testimony. In 11 years of unit operation of the South Burbank Field with the re-injection of gas it has produced as much oil per acre already as the North Burbank Pool produced in 24 years of life?

A. That is correct, and there were just half the number of wells per acre in the South Burbank Field.

Q. Now, from the present status of the wells in those two pools, does it appear that the recovery from the South Burbank is merely accelerated production, or does it represent an ultimate increase in the recoverable oil?

Mr. Bond: If the Commission please, the royalty owners and the Palmer Oil Corporation object to the question for the reason that it is not shown that the thickness of the sand and the porosity and permeability of the two pools is the same.

Chairman Bond: The witness testified the pools were comparable, but you can ask him about the like thickness of the sands, or you probably could go into the question with counsel, or you may ask it.

By Mr. Bond:

Q. Mr. Witness, will you state to the Commission whether the sand in the North and South Burbank fields carry the same thickness, porosity and permeability.

A. They do on the average, yes, sir.

Chairman Bond: You may proceed.

[fol. 165] A. The North Burbank operation has reached the stage where the pool is near its limit of production.

I think it would be reasonable to state that in about 10 more years of operation the pool will ultimately produce about from 13,000 to 14,000 barrels per acre. It is about 90 per cent gone, and will end up with about 14,000 barrels per acre.

By Mr. Williams:

Q. Do you have an opinion as to what the ultimate per acre recovery will be in the South Burbank Pool?

A. In the South Burbank Pool the ultimate recovery is going to be nearer 18,000 to 20,000 barrels per acre, and that is using a reasonable figure without trying to be too optomistic about it. It may well be more than 20,000 barrels per acre. In other words, the unitized gas injection operation in South Burbank is going to result in the recovery of one and a half times as much oil as was obtained from an exactly similar pool such as the North Burbank Pool.

Q. And it is your judgment, as an engineer, and from your knowledge of the Burbank Pools in relation to the Cement Pool, that the benefits obtained in the South Burbank Pool can well be expected to be obtained in the Cement Pool?

A. I think they could well be expected in the Cement Pool, and I think unit operation of the Medrano sand will result in even better performance than unit operation in the South Burbank Field, for the reason that the Medrano said has a structural characteristic which is shown on [fol. 166] Exhibit 25. The sand is tilted, which gives a great advantage to gas injection operation. I think that unit operation of the Medrano sand will result in a greater amount of increased recovery than we have been able to obtain from any unit operation to date.

Q. You testified that the North Burbank Pool had reached a stage where gas injection is of doubtful value, or where it has passed the stage where gas injection was efficient. Has that condition been reached at Cement?

A. No, sir; it has not.

Q. And it is your opinion that Cement Pool is suitable for such a program as you have testified to?

A. That is my opinion, yes, sir.

Q. You have mentioned the North and South Burbank. Name briefly a number of other pools in the country that have been unitized, and in which gas injection has been carried out.

A. One of the most famous unit operations, which have been rather well publicized in the various technical journals, is the famous operation of the Schuler unit in Arkansas. Another very early unit operation, I think it goes back to about 1920, is the Van Pool in Texas, which has proven to be very successful.

Another recent operation is the Erath Pool, a very large unit in Louisiana, and there are a number of unit operations in Louisiana, the Cotton Valley Pool, the Haynesville Pool, along with the Erath.

There are many unit operations in the Rocky Mountain [fol. 167] area. The Elk Basin unit was recently started, which covers some 28,000 acres, I believe, as an example, is one of the many unit operations that are to be engaged in in the Rocky Mountain area, due to the fact that the pools are mainly on federal lands.

Q. In how many unit operations is your company an operator, Mr. Kaveler?

A. The Phillips Petroleum Company is a member that belongs to approximately 25 or 30 unit operations of various kinds. We have for many years advocated the unit operation of pools, and have been quite successful in bringing unit operations about.

Q. Do any of those units involve gas injection methods of operation?

A. They do, and they also involve water flooding, or water injection, and they involve both—in one or two instances both gas and water.

Q. Of those 25 units do you know of any of the units that have been unsuccessful?

A. No, sir.

Q. Do you know of any of the units that have given rise to any complaint on behalf of land owners, royalty owners, lessees or others in interest?

Mr. Jones: I object to that as being incompetent, irrelevant and immaterial, on behalf of the Palmer Oil Corporation.

Mr. Bond: The same objection.

Chairman Bond: We are in conference. Will you read [fol. 168] the question, please?

(Last question was read by the reporter.)

Mr. Williams: If the witness is permitted to answer he will testify that out of the experience of his company with all of these units, that there has never been any complaint on behalf of royalty owners, land owners or lessees, and they have been entirely successful, which I think is an important factor to this Commission to know that unitization is not an untried scheme. It has been tried, in the light of his previous testimony, and it is one that proves highly satisfactory to all concerned. I think it is an important factor.

Chairman Bond: The Commission will permit proof as to successful operations of units of this character, but whether or not the royalty owners have a chance to object is material in this case.

Mr. Williams: Proof of the pudding, I take it, is the eating, of course. I will withdraw the question.

By Commr. Armstrong:

Q. Are these unitized pools you speak of voluntarily worked out by the operators and royalty owners?

A. Mr. Commissioner, in Arkansas they are voluntary. In Louisiana there is a state law that provides for unitization of the royalty in any pool which is a gas pool, and that law has been used extensively in the unitization of pools that produce condensate along with the gas. It was under that rule in Louisiana that the Erath unit was formed, and the Cotton Valley unit was formed, and that [fol. 169] two or three others were formed. But otherwise, in Texas, Oklahoma, Kansas and Arkansas, these units have all been voluntary, which is the reason why more of them have not been formed.

By Mr. Williams:

Q. Mr. Kaveler, do any of the units in which your company has an interest include government lands?

A. Yes, sir; our most extensive holdings in that respect

are, of course, in the Rocky Mountains, but it might be said that the oil production in Osage County, Oklahoma, is under the direction and supervision of United States Department of Interior, so that our close contact with the Federal Government is in respect to the operation of the properties in Osage County, Oklahoma.

Q. Are you familiar with the policy of the Government, the Department of the Interior and the United States Geological Survey with respect to unit operations where Government land is involved?

Mr. Jones: I object to that on behalf of the Palmer Oil Corporation. I wish to object to that question because it is immaterial to the issues in this case.

Mr. Bond: Same objection.

Chairman Bond: The Commission was conferring. Will you read the question.

(Last question read by the reporter.)

Chairman Bond: He may answer.

Mr. Jones: Exception.

A. I am familiar with the policy. The United States Department of interior advocates unit operation of oil [fol. 170] pools, and strongly urges upon the operators a unit operation of all pools wherein the Federal lands are involved, or wherein the Department of Interior has that jurisdiction. One of the best and most recent examples of that is the letter received recently from the Secretary of the Interior advocating unitized operations of the North Burbank Field for the purpose of water flooding. That suggestion by the Secretary of the Interior reflects the attitude of the Federal authorities in respect to unit operation.

By Commr. Armstrong:

Q. In that way does the Federal Government, through the Department of the Interior, represent the royalty owners? Is that right?

A. Yes, sir. There is only one royalty owner in the Osage Nation, and that is the Osage Indian Tribe, and the United States Department of the Interior supervises their interests in all of those Osage County operations.

By Mr. Williams:

Q. Getting back, now, Mr. Kaveler, to the method of operation, you referred a moment ago to water flooding. Explain a little more in detail how that operation was carried on and its possible effects.

A. A substantial amount of oil could be recovered from the Medrano sand by the operation called "water flooding." In general, if that were adopted during unit operation I see no reason why ultimately the Medrano sand should not be water flooded, and the procedure would be to go out beyond the limits of oil production for the pool and drill a well into the water bearing section of the sand.

[fol. 171] Mr. Bond: May I interrupt the witness to make an objection?

Chairman Bond: Yes; you may.

Mr. Bond: I think the witness should testify that the unit proposes to use water injection, if he is going to testify about water injection.

Mr. Williams: If the Commission please, he testified earlier that was a matter that came later, but we wanted to point out to the Commission that is one of the methods of operation that will be available through unit operation, and I will show by the witness' testimony that it cannot be available to the operators without unitization.

Mr. Bond: I will withdraw the objection.

A. With the well drilled beyond the limits of the oil bearing section and drilled into the water section of the Medrano sand, one could pump water into the Medrano sandstone—pump water into the sandstone much in the fashion gas would pumped into the gas area of the pool. The water pumped into the water well under pressure would rise in the oil section, and as it rose into the oil section it would push oil ahead of it toward producing wells much after the fashion that gas injected into the gas cap may have caused a pushing downward of oil and push the oil to producing wells.

There is one advantage in using water flooding over using gas injection, and that advantage is that water is capable of removing a greater percentage of the oil from the sand [fol. 172] than is gas, so as a last stage operation, as a

clean up operation, as the last thing to be done in this unit of oil section should be water flooding to remove the last round of recoverable oil that it is possible to remove from the sand.

By Mr. Williams:

Q. Is water flooding a new or experimental operation, or is it a proper proven method of operation in oil production?

A. Pools have been water flooded for many years, for 25 or 30 years at least. The practice of water flooding is well established, and it is not a new and untried method.

In my opinion, water flooding would be very successful in the Medrano sand as the last stage of operation of any final result to be done.

Q. Can water flooding, in your opinion, be carried on in the Medrano sand of the West Cement Pool without unitization of interests?

A. It cannot, for the reason that the best way to carry on the water flooding operation is to put the water in the ground where it will be most effective to produce oil under that water drive from the wells which may produce the oil most effectively. Neither one of those operations has anything to do with the surface property lines.

Q. I believe you testified as to the estimated recovery by means of water flooding. If you have, we don't need to repeat it again. I am just asking.

[fol. 173] A. I don't know whether I mentioned that figure or not, but when I testified that unitized operation would result in at least twice as much oil being recovered, I contemplated water flooding to be involved in that operation.

Mr. Williams: This may be a little repetitious, if the Commission please, but we have a calculation, and I would like for the witness to restate at this time two or three figures.

By Mr. Williams:

Q. What was your estimate of the total oil in the reservoir?

A. Officially the amount of oil in the reservoir at discovery was 97 million barrels.

Q. I believe you testified that by competitive methods of operation you estimated recovery would be 25 per cent.

A. Yes, sir. That 25 per cent recovery, I think that came to about 24 million barrels, was the production from the ordinary competitive pressure depletion type of operation.

Q. Now, for the benefit of the Commission, will you calculate what the additional recovery would be to each increased percentage of efficiency and recovery.

A. Do you mean, Mr. Williams, that if the recovery were increased from 25 per cent to 26 per cent?

Q. Right.

A. That increase of 1 per cent in the recovery would be 970,000 barrels, or roughly one million barrels. Each 1 per cent would be about one million barrels; 970,000 barrels, to be exact.

[fol. 174] Q. In other words, if by unitization you could increase the efficiency of operation only 1 per cent over the 25 per cent, you would get an additional million barrels of oil?

A. That is correct, and at $1.60 a barrel it will be an additional $1,600,000 of marketable value.

Q. And for each percentage of increase you gain another million barrels of oil?

A. That is correct.

Q. What percentage of increase are you talking about in this hearing to gain the advantages to which you have testified?

A. Well, I talked about 100 per cent increase, by reason of the fact I think unit operation will cause a recovery ultimately of about 50 per cent or greater. Used in the terms of which you are speaking, you may wish to say that the percentage increase is 25 per cent; from 25 per cent up to 50 per cent. So that, if one speaks in terms of your gain, the increase of recovery will be from 25 per cent to 50 per cent, and the increase will be 25 percentage points, and that would correspond roughly to 48 million barrels of additional oil—no, 24 million or 25 million bar-

rels, speaking of your increase. The increased recovery would be at least 25 million barrels.

Mr. Williams: Would it be asking too much if we had a five minute recess? We have been going an hour and a half.

Chairman Bond: We will take a recess.

(After short recess.)

[fol. 175] Chairman Bond: The Commission will now recess until 1:30.

(Whereupon at 11:50 o'clock a.m., a recess was taken until 1:30 o'clock p.m. of the same day.)

[fol. 176] (Afternoon Session. 1:30 P.M.)

Chairman Bond: Gentlemen, are you ready to proceed?

Mr. Williams: Yes, sir.

Chairman Bond: The reporter will be sworn.

(Reporter sworn.)

H. H. KAVELER resumed the stand and testified further as follows:

Direct examination (continued)

By Mr. Williams:

Q. Mr. Kaveler, you have described the methods of operation that are available to the operators under unitization and the results which, in your judgment, can be attained. What have the operators in the West Cement Pool done with respect to bringing about such a program concerning which you have testified?

A. I have previously testified that the operators began an organized study of the unit operation beginning about August, 1945. At that time, an operators committee was formed, having a representative from practically all of the operators in the field, with one or two exceptions. A geological committee, an engineering committee, and a legal committee were formed. Meetings were held frequently. Some of these committees, such as the engineering committee and the geological committee went into ses-

sions that extended for weeks at a time, in which the committees studied and evaluated the information in respect to this pool.

Over the year that intervened from August, 1945, up to [fol. 177] August, 1946, there resulted a general agreement among the working interest owners in respect to the distribution of equity in the unit; a general agreement among the working interest owners in respect to how the field should be operated; a general agreement in respect to many other points, so that in August, 1946, it was possible to prepare a contract and a plan of unit operation for the West Cement Pool.

Q. You say such a proposed plan has been prepared?

A. Yes, sir.

Mr. Williams: Mark this as an exhibit, please, Mr. Reporter.

(The instrument referred to was thereupon marked as Exhibit 52 for identification.)

By Mr. Williams:

Q. Mr. Kaveler, I hand you an instrument that the reporter has marked Exhibit 52, and will ask you to state, if you will, what that is.

A. This Exhibit 52 is entitled "Plan of Unitization of West Cement Medrano Unit." It sets forth the various contractual conditions that exist between the various parties and provides for the unitized operation of the West Cement Medrano Pool.

Q. Is that the plan of unitization to which you made reference awhile ago when you say that the operators had reached an agreement in that respect?

A. This is that plan.

Q. Is the plan that you have in your hand a copy of the plan that has been signed by the operators who subscribed to the plan?

A. This Exhibit 52 is a so-called executed copy of the [fol. 178] unit agreement containing the signatures of those companies and parties who subscribe to the plan of unitization.

Q. For the information of the Commission, will you

name, if you will, the companies that have subscribed, as shown by that exhibit.

Mr. Page: Are you introducing this exhibit?

Mr. Williams: I am just leading up to it.

Mr. Page: Doesn't it speak for itself?

Mr. Williams: Oh, it probably does but in this type of a hearing it will save the Commission reading all of these exhibits to see what they say.

A. Exhibit 52, beginning on page 27, shows execution of this agreement as unqualified subscribers, the Amerada Petroleum Corporation; Anderson Prichard Oil Corporation; Cities Service Oil Company; Foster Petroleum Corporation; Gulf Oil Corporation; Magnolia Petroleum Company; Phillips Petroleum Company; Ray Stephens, Incorporated; Stephens Petroleum Company; Sunray Oil Corporation; Stanolind Oil & Gas Company.

It shows further, in showing subscribers as qualified subscribers, Caddo Oil Company; James L. Rookstool; J. H. Everest.

Mr. Williams: The applicants at this time would like to offer in evidence Exhibit 52.

Chairman Bond: Received.

(Exhibit No. 52 is made a part of the record and is set out in proper numerical order in the exhibit binder accompanying and made a part of this record.)

[fol. 179] Mr. Bond: May I ask the witness a question, Your Honor?

Chairman Bond: You may.

By Mr. Bond:

Q. Will you state the difference between a qualified and an unqualified subscriber?

A. The difference comes about by reason of this necessary provision. If the West Cement unit is formed, there will result additional investment in gas injection pressure maintenance equipment. There will result the drilling of additional wells. There will result other expenses incident to and associated with the pressure maintenance operation.

House Bill 339 provides that if 85 per cent subscribe to the plan, or if not more than 15 per cent protest, that the working interest represented by less than 15 per cent can be forced into the unit operation.

House Bill 339 further provides that some means must be made available to any party forced into this unit operation who does not, for some reason or another, have the financial resources to make his proportionate share of the unit investment.

Now, those who signed the unit plan in this instance as unqualified subscribers state by their unqualified signatures that they are willing to advance the money to those who would not have the cash available to make the investments that the unitized operation would force upon them.

Those who sign as qualified subscribers accept the plan of unitization but they do not commit themselves to supply [fol. 180] any cash advanced to parties in the unit who would not otherwise have the financial resources to make the necessary additional expenditures incident to unit operation.

Mr. Bond: That is all.

Mr. Page: May it please the Commission, in connection with the offer of this exhibit——

Chairman Bond: Very well.

Mr. Page: On behalf of B. E. Johnson and Virginia and M. L. McIntyre, who are the record owners of an undivided one-half interest in what is commonly referred to as the Plummer east eighty, the same being the East Half of the Southwest Quarter of Section 34, Township 6 North, Range 10 West, we object to its introduction as to that portion of the lease because the same purports to show that the Stephens Petroleum Company have signed on behalf of the entire lease.

I just want to keep the record straight.

Chairman Bond: Very well. Overruled and exceptions allowed.

Mr. Page: Exceptions.

Mr. Williams: For the purpose of the record, may it be stated on behalf of the applicants that there is no claim

made that the signing of this plan by the Stephens Petroleum Company extends to the interest of Mr. Page's clients.

Mr. Page: That is fine. I just wanted that in the record.

Mr. Williams: I assume that everyone around the table have copies of Exhibit 52 because they have been given [fol. 181] general circulation, but perchance that is not true, there are additional copies on the table for parties having interests, and who desire a copy.

By Mr. Williams:

Q. Mr. Kaveler, are there any operators of wells in the West Cement Medrano Pool who have not signed this plan of unitization, either as a qualified or an unqualified subscriber?

A. The Palmer Oil Corporation are operators of Medrano wells and they have not signed in either classification, and a Mr. Porter, who is the operator of one well, he has not signed the application—I mean the unit plan.

Q. Have the operators who have not signed the unit plan participated in the study that has been made of the pool?

A. No; they have not. Those who have not signed have not participated, although Mr. Palmer did attend at least one of our meetings, and perhaps two in the late stages of this study, and Mr. Porter's well was just recently completed. He became an operator in the field late in the course of the study. Mr. Palmer, I think, has been supplied with all of the pertinent information developed during the course of the study, and was supplied with it as the material was developed. Mr. Porter was advised of our interest in having him participate in these meetings, but he did not attend, nor, so far as I know, did he have a representative present on any of the committees.

All of the operators who participated in the study have [fol. 182] signed the agreement. The only two non signers are the two operators who did not participate in the study.

Q. I believe you testified earlier that both of the operators who did not sign were invited to join in the study,

A. They were invited from the beginning of the study to join. Mr. Porter, of course, came into the picture a little later and he was advised as soon as we found out he was to have a producing well.

Q. Before we go into some of the provisions of this plan, I am reminded that during the recess the question was asked in the light of your testimony this morning, that South Burbank was unitized by voluntary unitization. Why could not the same condition exist with respect to West Cement? Do you know the answer to that question, Mr. Kaveler?

A. I think the answer to that question——

Mr. Jones: I object on behalf of the Palmer Oil Corporation for the reason it is not material and it calls for a conclusion of the witness who is not qualified to answer.

Mr. Williams: As I view this hearing, if the Commission please, it is legislative, or at least quasi legislative in its nature, in that this Commission is sitting as an aid to the Legislature to carry into effect some of the terms of a plan that the Legislature indicated ought to be carried into effect, and I believe that the Commission, sitting in that capacity, should have the benefit of all information available in [fol. 183] regard to subjects of this kind. I think it is very vital in this hearing to know why unitization is necessary, and it has been brought out in the testimony this morning that in another pool in Oklahoma unitization was voluntary. I think the Commission will want to know why in Burbank it could be thus and in another pool it could not be thus. Here is a witness who has an interest in Burbank, is acquainted with that situation and he knows the facts with reference to Cement. I believe he could be of an aid to the Commission if he is permitted to answer.

Chairman Bond: The witness may answer. Exceptions will be allowed.

A. I think the reason that it was possible to unitize the South Burbank Field for the purpose of increasing the ultimate recovery was because of the fact that there was but one royalty owner, that royalty owner being the Osage Indian Tribe.

I think an additional reason why it was possible to unitize the South Burbank Field was the fact that the Osage Indian Tribal affairs were in the hands of the U. S. Department of the Interior. The Federal Government is very receptive to the suggestion that pools be operated as a unit, and it

was with the urging of the Department of the Interior that the unitization was accomplished.

Now, South Burbank had about 17 working interest owners. That was a group small enough also to work with and bring about the unitization, but the main contributing factor was the fact that there was but one royalty owner.

[fol. 184] Mr. Bond: May I ask the witness a question?

Chairman Bond: Go ahead.

By Mr. Bond:

Q. Why is it that the Medrano could not be unitized until this law was passed?

A. For the reason that 25 years of experience in unitization work shows that it is impossible to get the royalty owners into 100 per cent agreement that would permit the unitized operation. A unit operation cannot be conducted until 100 per cent of the royalty interests and 100 per cent of the working interests join in the plan voluntarily.

Commr. Armstrong: You had 100 per cent of the operators and the royalty owners in Burbank?

The Witness: Yes, sir.

Commr. Armstrong: And here you don't have 100 per cent of either?

The Witness: That is correct.

By Mr. Williams:

Q. Have the operators cooperating in this program been able to get 100 per cent agreement on the part of the operators in West Cement?

A. No, sir.

Q. Mr. Kaveler, in arriving at a unitization agreement or a plan of unitization, what is the first and most important factor to be considered in such a program, other than engineering features as to the results, but in the plan itself, what is the major factor?

A. The major problem in bringing about the unitization [fol. 185] of any pool is to give to each owner in the pool his fair and equitable share of the recoverable oil and gas within the pool.

That same statement might be made in this way: The objective or the principal problem in bringing about a uniti-

zation is to give each lease contributed to the unit a fair and proper credit for the recoverable oil and gas in place on each lease contributed to the unit.

Q. Is that a problem of interest to the lessees, as well as to the royalty owners?

A. In the matter of arriving at a distribution of the equity in the pool, the working interest owners and the royalty interest owners have a common problem.

The unitization of a pool gives to each lease in the unit a certain percentage of the unit production. That percentage of the unit production is assigned to the lease and out of that percentage of unit production assigned to the lease, the royalty owner under the lease gets his royalty oil and the working interest owner gets his working interest oil.

In unitization, in so far as distributing the proceeds of the unit, it does not distinguish between the interest of the royalty owner and the working interest owner. Each get their percentage out of the interest assigned to the tract contributed. In other words, there is nothing taken away from one person—there is nothing taken away from one lease and given to another or taken away from that lease and given to another. There is no distinction as between [fol. 186] the royalty interest and the working interest. The effect of that is that in the unit operation, the oil and gas sold is allocated to a lease just as if that oil and gas were produced from that lease. Out of that production, the working interest in the lease and the royalty interest in the lease get their share of the proceeds.

Q. Then, I understand from your testimony that both the lessee, as well as the royalty owner of a particular tract, are interested in the amount of oil or of unit production allocated to that tract.

A. That is correct.

Q. Was the matter of distribution of the unit production under unitization given consideration by the operators and their subcommittees, in connection with the operation of the plan that has been here introduced?

A. The study of the problem of distributing equity in the unit was the one point that consumed most of the time in the year that elapsed, during which this plan was being evolved. That was the major problem. That was the prob-

lem to which all of the operators gave most of their time and effort.

The rest of the provisions of this unitization agreement are relatively insignificant, not nearly so important as the one provision which allocates the unit production to the separate tracts. I would say that 90 per cent of the time of the large group of people that worked on this problem for [fol. 187] a period of a year was given to that one single matter, a study of the fair and equitable means of distributing the unit production. I would say that it has been studied very thoroughly and given very serious consideration.

Q. Can you state for the record and for the benefit of the Commission, Mr. Kaveler, the method finally arrived at for the solution of that problem, including in general the factors taken into account?

A. The object of the equity distribution is to give to each separate lease contributed to the unit its fair share of the recoverable oil and gas that lays beneath each separate tract. That was the objective of the geological committee, the engineering committee, and the legal committee, who studied the problem. Obviously, the fairest way to go at that problem is to consider the pool, without regard to property lines.

The operators committee gave as one of its charges to the engineering committee and the geological committee, the responsibility to proceed with the study of this equity problem without regard to property lines. As a consequence, the geological committee prepared what has been introduced here as Exhibit 24, which, as shown by the black ink line, represents an area of the pool that entirely embraces the productive oil and gas area of the Medrano sand. An examination of Exhibit 24 will show that the black ink line that sets the limits of production, not only embraces entire leases of 80 and 160 acres, but also embraces parts of [fol. 188] leases and in a few instances only a matter of 10 acres out of a 160 acre lease. That reflects the fact that the geologists, in approaching their problem, drew the limits of the production of the Medrano sandstone without any regard to property lines.

They set the limits and then placed them on the map and

where those limiting lines fell, all of that acreage was considered to be and should be considered to be within the productive area of the Medrano pool.

After the geological committee drew the limits of the pool, they then proceeded to determine from the 52 wells drilled, the thickness of the productive sand in the Medrano horizon beneath each lease.

The next step was to prepare a sand thickness map that showed the thickness of the oil saturated sand initially and a second map that showed the thickness of the gas saturated sand initially.

Up to that point, we had information which would permit anyone to compute the thickness of the productive Medrano sand beneath each lease which lay wholly or partly within the boundary of the production as shown on Exhibit 24.

Now, in my previous testimony, I considered the engineering calculations which would permit one to proceed from the point where the acre feet of net productive sand is determined, to the point where the amount of oil and gas beneath each tract can be computed. Those calculations [fol. 189] are well established in the petroleum industry and need not be repeated here.

Q. Those are matters that can reasonably be determined?

A. Enough wells have been drilled in this pool and sufficient information has been obtained so that anyone versed in the geological and engineering art should be able to make the computations that were made in order to arrive at the equity distribution.

In answer to your question, I would like to summarize the procedure that was engaged in. The net procedure was as follows: In order to give each lease its fair credit, that lease had to be credited for both gas beneath it and oil beneath it if both were present, or if gas alone or if oil alone, if only one of the two were present.

In making an estimate of the gas in place, the procedure was as follows——

Mr. Bond: If the Commission please, may I interrupt the witness just a minute to make an objection?

Chairman Bond: You may.

Mr. Bond: I thought that the witness would continue with his testimony on how the thickness of the sand was deter-

mined but I see that he is not and I wish to object to his testimony as to the thickness of the sand and ask that it be stricken for the reason that it is based on inferences and hearsay evidence.

Mr. Williams: May I, for the benefit of counsel and for the Commission, give you a little inside as to our plan of procedure here? It was thought that if the witness could [fol. 190] first give a generalized summary of the various steps that were taken, you could then look at the entire formula as a whole. He would then go back on each of the various steps and go more into detail with respect to each such step.

Mr. Bond: With that understanding, I will withdraw my objection, if I am permitted to make the same objection later on.

Chairman Bond: Very well.

Mr. Williams: If the witness does not go into the detail he wishes on cross examination, we will hold him here for such time as he may desire to ask such questions on cross examination.

Chairman Bond: Very well.

A. The gas in place beneath each lease was calculated from the acre feet of sand found to be productive of gas; from the pressure of the wells that existed in November, 1946—I beg your pardon, 1945. That is a correction. And from the porosity and connate water data.

By Mr. Williams:

Q. What do you mean by connate water, Mr. Kaveler?

A. The sands that contain oil and gas are not filled 100 per cent with oil and gas. Part of the porous space in the sand is filled with water. All such reservoirs were first filled with water before they were filled with oil and gas. When the oil and gas accumulated, all of the water was not pushed out of the sand, so that the connate water is the water that remains behind, associated with the oil and gas, and in this instance of the Medrano sand, it is estimated [fol. 191] that 20 per cent of the porous space was filled with such water.

Q. And that factor was taken into account?

A. Yes, sir.

Q. You may proceed.

A. From the acre feet, pressure, porosity, and connate water, it is possible by a direct calculation to compute the number of cubic feet of gas beneath each tract in the gas area of the pool. That calculation is made directly. It was then considered that 95 per cent of the dry gas in place in the pool would be recoverable so that each lease—the gas in place beneath each lease, 95 per cent was considered to be the reserve, and from that direct calculation, the reserve for each lease—the gas reserve for each lease was calculated.

Now, for those leases which lay in the oil productive area of the pool, the following procedure was followed: The acre feet of the productive sand that was saturated with oil originally was determined. I might say that these calculations are all based upon a determination of the original gas-oil contact in the field. From the acre feet of sand originally saturated with oil and which was productive, the coronalysis data of the porosity and the connate water can be used directly to calculate the barrels of oil in place originally beneath each tract. That is a straight-forward calculation which anyone familiar with the art can perform.

Having once calculated the barrels of oil in place originally, the amount of production up to March 1, 1946, was [fol. 192] subtracted—pardon me, I have left out a step which I now want to add.

From the barrels of oil in place, it was considered that 35½ per cent of the oil originally in place would be recoverable under the method of operation contemplated by the unit. Applying 35½ per cent then to the oil originally in place gave the reserve of the oil originally. It gave the original oil reserve. Then, from that original oil reserve was subtracted the oil produced to March 1, 1946. That subtraction gave the oil reserve beneath each tract from 1946 onward into future time. In other words, it gave the future oil reserve of each tract.

Having reached those two figures, one had the gas reserve on those leases that had dry gas under them and one had, in addition, the oil reserve of all leases that had oil under them. Those leases along the center part of the field

which had both oil and gas under them were of course credited for dry gas reserve and for crude oil reserve.

For example, on Exhibit 25, the Phillips Petroleum Company Oaks lease shows that the Oaks lease No. 3 well is completed in the oil zone and Oaks No. 1 well is completed in the gas zone. That particular lease had both dry gas and oil under it, so it got credit for the dry gas and for the crude oil that was under it in this calculation.

Then, there were leases such as the Sunray-Dixon which had no crude oil under them originally, and leases like the Sunray-Dixon therefore got credit only for dry gas.

[fol. 193] Then, there were leases such as some of the Amerada leases that lay wholly in this oil zone that got credit only for crude oil.

Q. Then, your first step was to determine the future reserve of oil and gas underlying the various portions of the reservoir?

A. That is correct, yes, sir.

In order to derive the result, the gas reserve being in terms of thousands of cubic feet of gas and the oil reserve in terms of barrels of oil, you are faced with the old problem we had in arithmetic, you can't add apples and peaches. You have to put them on a common basis before they can be added together. As a matter of convenience and necessity, the device was used of converting those reserves in dollar values. For that purpose, the gas reserve was estimated on the basis of 5 cents per gas cubic feet of gas. The oil reserve was computed on the basis of the dollar value of $1.52 per barrel. Using that device, it was possible then to express the gas reserve and the oil reserve beneath each lease in terms of dollars. The total equity dollars attributed to each lease then was the measure of that lease's share of the oil and gas reserve of the pool. The dollars assigned to each lease, when totaled up, would permit one to determine what percentage of the entire would be attributed to any lease.

Now, that method was the method in principal for arriving at the oil and gas reserve attributable to each lease.

[fol. 194] Q. What, then, was the next step, Mr. Kaveler?

A. There were certain deviations from that method of application which I would now like to state.

In the first place, the first deviation from that straightforward application came in respect to certain leases laying at the extreme east and at the extreme west limits of the Medrano pool. It was evident to all who studied this problem that those certain leases had a sand quality which was much less than the average. I refer more specifically to those leases which are on Exhibit 24—I beg your pardon, which are on Exhibit 25—no; I beg your pardon again, it is on Exhibit 24. I refer more specifically to those leases which are on Exhibit 24 and are marked No. 1, No. 2, No. 3, No. 66, No. 67, No. 68, No. 69, and No. 70.

Q. Now, tracts 1, 2 and 3, are tracts at the extreme west end of the proposed unit area, is that correct?

A. I point on Exhibit 24 to tracts 1, 2 and 3. They are at the extreme west point of production.

Q. Now, will you point to tract 66, 67, and subsequent, as you have them noted here?

A. I point to tract 66 at the extreme east end of the pool, tract 67, tract 68, tract 69, and tract 70. They are the five tracts at the easter-most extremity of the Medrano sand.

Information from a geological standpoint indicates that the sand on those eight tracts is of poorer quality than the [fol. 195] rest of the Medrano sand. Those tracts, therefore, should not receive as much credit on the average as the other tracts. For that reason, the sand thickness on the seven tracts was reduced by 50 per cent in determining the acre feet of net productive sand for the purpose of the equity calculation.

Now, there are other reasons why in the instance of those seven tracts such a reduction——

Q. You said seven. Do you mean eight?

A. Pardon me, I mean eight. Such a reduction should be had.

The first place is that none of these eight tracts have a producing well on them, which is an additional reason over and beyond their geological indications that such a reduction in credit to those tracts should be made.

It will be observed that tract No. 2 has located on it a dry hole drilled to 6900 feet. The operators, in covering that matter, had the advice of the geological committee. The geological committee pointed out that that well was

drilled as long ago as—as I recall, back about 1936. That was the time that dry hole was drilled, which preceded the discovery of oil by some four years. The opinion is that that well did encounter saturated Medrano sand; that there is recoverable oil under that lease and therefore the lease should not be left out of the unit. The reason the lease should not be left out of the unit is that we were making an effort in this instance, to give credit to any lease that had any recoverable Medrano oil and gas beneath it.

[fol. 196] A second deviation from that straightforward procedure was made in this respect: Exhibit 25 indicates very clearly that one of the outstanding characteristics of the Medrano sand is the steepness of its dip. It is a pool that is turned on end more than is usually encountered. The fact that the pool is tilted gives some advantage to the oil leases that are lowest structurally. On this Exhibit 25, a well that would be located lower structurally and closer to the water table than Phillips Oaks No. 3 would be in a position to obtain recovery by virtue of what we call "gravity drainage." The oil naturally tends to sink down to the bottom of the contour anyway.

In order to give those leases that are lowest structurally some credit for the fact that they have an advantageous location, it was agreed that some additional credit for recoverable oil should be given beyond the credit that would be derived solely from the acre feet of productive sand.

After extensive discussions and analysis of the problem, it was agreed that an amount of oil equal to four per cent of the initial reserve should be given to them. Of 97 million barrels, 4 per cent would figure what—3,880,000 barrels of oil would be distributed amongst those leases in a manner so as to give the leases lowest structurally credit for their structural position, and that distribution was made essentially in this manner:

I refer to Exhibit 25 and point out that a well which is located right at the oil-gas contact would not be in a posi-
[fol. 197] tion to gain much oil by so-called gravity drainage downward, whereas on Exhibit 25, a well that would be located at the water-oil contact would be in the best position to gain additional oil by downward movement of oil in the reservoir.

It was then decided that a fair measure of how to distribute this extra 4 per cent of the oil would be to distribute the oil in proportion to the distance that the center of the lease was from the original oil-gas contact. For example, a lease located right at the oil-gas contact would have a waiting factor of zero. A lease located at the water-oil contact would have a waiting factor of 741 feet. A lease intermediate in between those two would have a waiting factor somewhere between zero and 741, so that following that procedure whereby 4 per cent additional oil was given to leases in a manner proportionate to the distance that the lease was below the original oil-gas contact, was a means of giving equity to the leases that are lowest structurally and which would, by virtue of that structural position, have an increased reserve.

Now, that adjustment is small. It is only 4 per cent of the total oil in the pool, but yet we made that adjustment for the purpose of trying to make an outright and definite effort to weigh all of the factors that should go into a determination of each person's fair share.

Now, a further adjustment had to be made——

Mr. Jones: Just a minute. I would like to know what [fol. 198] leases have got that.

Mr. Williams: We are going to have a map introduced as soon as he finishes that part of his testimony showing which leases and the amounts per lease.

Mr. Jones: All right; I will waive it.

Chairman Bond: You may proceed then.

Mr. Wiliams: I have no objection to your inquiring now, but I thought we should get these deviations in the record.

Mr. Jones: All right.

By Mr. Williams:

Q. I believe you stated there was another point of deviation.

A. Yes; one other point of deviation involving this fact. In my previous testimony, I stated to you that the dry gas reserve was calculated for pressure conditions existing November 1, 1945. I stated that the crude oil reserve was calculated for conditions existing March 1, 1946. So, in

time, there was a four months discrepancy, November and December of 1945 and January and February of 1946 between the time when the gas reserve was computed and the oil reserve was computed. In order to put both reserves down to a common date, after we calculated the gas in place on November 1, 1945, we subtracted from that figure the production that was actually had from the gas leases for the four months, and in that way reduced the gas reserve to the same calendar day for which the oil reserve was computed.

Q. Mr. Kaveler, was any consideration given to the factor of current income to the several leases?

[fol. 199] A. What I have stated to you already is a description of the manner in which the oil and gas reserve beneath each tract was calculated, the oil and gas reserve for each tract.

In arriving at each person's fair and equitable share of unit production, attention was called to the fact that the future of an oil and gas lease does not rest entirely and solely with the recoverable oil and gas beneath it. The rate of the production of that oil and gas contributes to the marketable value of the lease. It was with that thought in mind that the operators agreed that in assigning the equity to the several tracts in this pool, that the equity should not rest entirely upon the recoverable reserves in place, but that some credit should be given to current income. If you choose to call it by another name than current income, you might call it daily production of oil and gas.

Those leases that had wells that are making their allowable, were more valuable in some respects than the leases that either had no wells or had wells that did not make their allowable. It is also true that leases that had oil wells on them were more valuable than the leases that had only gas wells on them, from a current income and a worth standpoint, so that a person's equity in this pool, his fair share of the values that were there, should rest in part upon the reserve beneath the lease, and should rest in part in terms of the number of dollars the lease was producing each day. An attempt to weigh those two factors together led to the conclusion by the operators that the oil and

[fol. 200] gas reserve shall carry a weight of 80 per cent of the final equity and the current income should carry a weight of 20 per cent, so that counting 80 per cent of the unit equity as based upon the dollar value of oil and gas reserve and 20 per cent based on current income, the two factors weighed in that relationship were used to produce the unit equity attributable to each separate tract, which unit equity is set out in Exhibit 52, for each separate tract in Exhibit B, part 1 thereof.

Q. I will ask you, Mr. Kaveler, if the percentages of equity set out in the exhibit to which you refer were arrived at through the engineering process which you have here described?

A. They have been.

Q. Is it contemplated, Mr. Kaveler, that those percentages once established by the Commission's approval of this plan, should remain fixed, or would they be percentages that are subject to change from time to time?

A. They will remain fixed as to apply to the area of the pool defined upon Exhibit 24.

Q. In other words, once those percentages become fixed by an order of this Commission approving these percentages, or such other percentages as may be found proper in the sight of the Commission, that those percentages from that point on represent a fixed interest in the unit in respect to each of the several tracts?

A. Yes, sir.

[fol. 201] Q. Now, where you in your testimony refer to each tract, do you refer to the tracts as they are shown and numbered on Exhibit No. 25—Exhibit 24?

A. I do.

Q. As the separate tracts to which you refer are thereon numbered?

A. Yes, sir.

Q. Now, Mr. Kaveler, have you prepared an exhibit in the form of tables that outline in detail the testimony that you have just given, except to the extent of further showing the result of those various calculations with respect to each of the several tracts?

A. I have.

Mr. Williams: Mark that as an exhibit.

Commr. Armstrong: I believe you stated that there wasn't any effort made to distinguish between working interest and royalty interest, is that right?

The Witness: That is right, Mr. Commissioner.

On Exhibit 24, as far as the Phillips Oaks lease is concerned, which is tract No. 26, the entire calculation proceeded in respect to the Phillips Oaks lease. At no time was there any distinction made between royalty interest and working interest. The result of that is, Mr. Commissioner, that the only effort made was to assign an equity to that tract. After that equity is assigned, then any income to the Oaks lease is divided among the various parties in the manner required by the lease contracts.

[fol. 202] Mr. Williams: Mark this, please.

(The instrument referred to was thereupon marked Exhibit 53, for identification.)

By Mr. Williams:

Q. Mr. Kaveler, I hand you a set of pages that have been marked by the reporter as Exhibit 53 and will ask you to state if that is the table or the exhibit to which you have just made reference?

A. That exhibit comprises three long sheets that are marked table 1, and three smaller sheets—I beg your pardon, five smaller sheets that are marked tables 2 and 3 respectively. Exhibit 53 is a summary of each stage of the computation that was made in arriving at the percentage equity in the manner that I have just generally described.

Q. Does that give the information to which you refer by tracts?

A. It gives the information by tracts, by company and lease, and sets out the value of each of the factors that entered into the equity computation.

Q. I notice the first tract named on the exhibit is tract No. 15. I am wondering if from that tract number you can go to Exhibit 24 and point out on the map the tract in question?

A. The first tract mentioned in Exhibit 53 is tract No. 15, which I now point to as being the Amerada Beemer lease, in the northeast of the southeast of section 33. I have my pointer at that point.

[fol. 203] Q. Now, for the benefit of the Commission, Mr. Kaveler, will you just a little more in detail explain how this exhibit can be used to show the engineering processes which you have described.

A. I refer to Exhibit 53 and to the first mentioned tract, tract No. 15, the Amerada Petroleum Company Beemer lease. In that row on table 1 is set forth the number of acre feet of productive oil sand in the Medrano zone, which is continued in column 1 immediately to the right of the lease named.

In column 2 is the estimated oil in place in thousands of barrels, and that column is the original oil in place on that lease. That is column 2.

Then, in column 3, proceeding to the right, estimated oil recovery, which is the production of that lease up to March 1, 1946.

Q. That is future estimated oil, isn't it?

A. I have been corrected in respect to column 3. It is the estimated future oil recovery——

Q. Estimated oil recovery?

A. I will restate again the meaning of column 3. Column 3 in Exhibit 53, table 1, is the estimated ultimate production of oil on the tract 15, based upon a 35½ per cent recovery of the oil originally in place.

Column 4 shows the amount of oil in thousands of barrels which is attributed to that lease as a result of the adjustment for gravity drainage. It shows the amount of 3,880,-[fol. 204] 000 barrels that was distributed, based upon gravity drainage, that was attributed to that lease.

Column 5 is the production of the lease to March 1, 1946, in thousands of barrels.

Column 6 is the estimated recoverable oil on the lease as of March 1, 1946, which is the reserve remaining.

Column 7 contains no figures for this lease, which indicates that there is no dry gas on that lease. It indicates that this lease lays entirely within the limits of the oil saturated zone, and therefore, in columns 8 and 9, there is no gas reserve nor no value assigned to dry gas.

Column 10 for the tract No. 15 shows the result of multiplying $1.52 times the value as shown in column 6, the estimated future recoverable oil.

Then, in the second to the last column on that page, it shows the percent of the total which column 11 is of the total of column 11. In other words, that is the percent of the dollar value of the oil and gas reserve that is attributed to tract 15.

Table 2 of this exhibit lists first again tract No. 15. In the first column, it gives the tract number.

In the second column, the company name and the lease name.

In the third column, the percentage that appeared in the second to the last column of table 1, namely the percentage of the total reserve dollar value which is attributed to the Beemer lease.

[fol. 205] In column 2 of this table 2 is given the percentage of the daily oil and gas production, expressed as dollars income daily, the percentage of the dollar income that is attributed to the Beemer lease.

Column 2—I beg your pardon, column 3 shows 2.096 per cent of the daily income from oil and gas sold from the Medrano pool is attributable to the Beemer lease. Now, I might add, since I did not mention it in my previous testimony, that column 3, which is the current income figure, is based upon May, June and July production for the year 1946.

Table 3, which is a part of this Exhibit 53, lists the daily oil income and daily gas income for those three months of May, June and July, expressed as an average of the three months, which is the information that was used to derive the percentage of current income which is contained in column 4 of table 2.

Q. Now, Mr. Kaveler, in the case of the income from gas during those months, did you use the actual income based on production, or did you use the factor of the allowable?

A. In computing the income to leases, the computation was made as if all of the allowable gas was being sold during the three months, May, June and July. That was done for the express purpose of not penalizing anyone for current income in the event the pipe line in those three months wasn't taking the gas.

Mr. Williams: We would like at this time——

[fol. 206] A. Let me finish up now.

Mr. Williams: I beg your pardon. Go ahead.

A. There is further shown on table 2 of this Exhibit 53 in the fifth column, 80 per cent of the value of column 3, and in the sixth column, 20 per cent of the value shown in the fourth column of this table 2, which is the waiting 80 per cent different value of the reserve and 20 per cent different value of current income, from which is derived the equity attributed to each of the separate tracts, which equity is set out in the last column of this table 2, and shows the equity that is contained in the unit contract, Exhibit 52, Exhibit B, part 1.

Chairman Bond: The Commission will recess for 10 minutes.

(Ten minute recess.)

Chairman Bond: Come to order.

Mr. Williams: I would like at this time to formally offer into evidence Applicants' Exhibit 53.

Mr. Bond: We object to Exhibit 53 for the reason that it is not properly identified; the work was not done under his supervision, the supervision of the witness, or at least it has not been so shown. It consists of inferences based on inferences and is highly prejudicial to these protestants' rights.

Mr. Jones: I join in the same objection.

Chairman Bond: You may cross examine the witness if you wish.

Mr. Williams: I will show that it was made under this witness' supervision and observation.

[fol. 207] Chairman Bond: Overruled.

Mr. Bond: Exceptions.

Chairman Bond: Exceptions allowed.

(Exhibit No. 53 is made a part of the record and is set out in proper numerical order in the exhibit binder accompanying and made a part of this record.)

By Mr. Williams:

Q. Mr. Kaveler, as chairman of the operating committee of the West Cement Operators' Committee, did you have any responsibility with respect to the supervision or ob-

servation of the engineering and the geology in the other work that was being done?

A. As chairman of that committee, it became my responsibility to supervise the work of the subcommittees, maintain a personal familiarity with it, a personal knowledge of what it was that they were doing, and I did that.

Q. Did your company have a man on the engineering committee assisting in making the actual determinations and calculations shown on this exihibit?

A. We did on both the engineering and the geological committees.

Q. Who was the engineer representing your company on that subcommittee?

A. Mr. Gilbert Wood, Jr.

Q. Did you have any supervision over the work being done by Mr. Gilbert Wood on behalf of your company?

[fol. 208] A. I did.

Q. Were other companies represented on that committee?

A. Other companies were represented on both the geological and the engineering committee. The membership has been given in previous testimony and a number of companies were represented on the legal subcommittee which drew the contract following the work of the engineering and the geological committee.

Mr. Page: Who is Gilbert Wood, Jr.?

Mr. Williams: He has testified.

Chairman Bond: Have you gentlemen any further objections?

Mr. Bond: The same objections.

Chairman Bond: Are you going to have these gentlemen here to testify or are you going to have the work sheets?

Mr. Williams: Those gentlemen are here available to testify and will explain at the request of counsel the accuracy of any particular calculation.

Chairman Bond: You may proceed.

By Mr. Williams:

Q. Mr. Kaveler, you did not yourself make any of the calculations that went into these figures?

A. I did not do the pencil work, no, sir, but the pencil work that was involved is so clearly set out that anyone familiar with the practice could take Exhibit 53 and repeat the work.

Mr. Bond: If the Commission please, my objection goes to the fact that the exhibit is basing an inference on an inference. We suppose that the witness has properly identified the exhibit.

[fol. 209] Chairman Bond: The objection would be good otherwise but counsel has said that he would have the witnesses here who actually made the compilations.

Mr. Bond: Exceptions.

Chairman Bond: Exceptions allowed.

Mr. Williams: We will be prepared, if the Commission please, to answer any question with respect to any tract in detail. The engineers who made the calculations are here. They have the figures they used and the other data that may be desired.

Chairman Bond: Very well. You may proceed.

Mr. Williams: I might say to the Commission that the various lessees and operators involved in this study have been just as vitally concerned in those processes as are any of the opposing counsel here.

By Mr. Williams:

Q. Mr. Kaveler, were any other considerations taken into account in arriving at the equity division as between leases or the return to leases under unitization?

A. There were no other considerations involved in the distribution of equity as between the separate tracts than those considerations that I have already detailed. There are, however, two other elements in the contract which affects royalty payment, which are two provisions as follows:

In the West Cement Field Medrano sand pool, there is accumulated a large volume of under production of allowable gas, under production that has accumulated for various reasons, mainly for the reason that the pipe lines [fol. 210] do not take the allowable during the summer months, and do not always make up the allowable not pro-

duced by taking extra gas in the winter time. It was felt that some provision should be made to keep that under produced gas in the Medrano sand. For that reason, all of the under production that exists up to but not beyond November 1, 1946, will be bought by the unit operators at the same rate at which the gas would be sold had that under production been produced and sold to the pipe line. The net effect of that is to pay to the various tracts that have under production a sum of money equivalent to the under production. When that payment for under production is made to the various tracts the royalty owner will receive his share of that payment in the same manner as if the under production had actually been produced. That is one provision in the contract that affects the royalty interest, and because it affects the royalty interest, I mention it at this point.

Q. Is that the adjustment that is referred to in Section XIV on page 18 of Exhibit 52, the plan of unitization applicable to the pool?

A. It is.

Q. And is the adjustment to which you refer there set forth in detail?

A. It is.

Mr. Thompson: May I ask a question there?

[fol. 211] Chairman Bond: You may.

Mr. Thompson: When is it contemplated that that will be bought and paid for after this goes into effect?

The Witness: On the effective date of unitization.

By Mr. Williams:

Q. I believe you started to state there was another factor to be taken into account, or that was taken into account?

A. There was one other provision which affects the royalty owners, and that provision comes about as a result of a circumstance such as this: The daily oil allowable to the oil wells in the West Cement Field is a basic unit allowable of 200 barrels per day. All wells have that basic unit allowable, subject to certain gas-oil ratio restrictions.

Q. Now, when you say unit allowable, you mean per well allowable?

A. Yes; drilling unit allowable or per well allowable.

That per well allowable is given to wells, whether they have 15 feet of sand production, sand thickness, or whether they have 100 feet. That situation causes some of the oil leases to have a very substantial reduction in daily income if the unit is formed. It is obvious, for example, that if a lease is brought into the unit and given credit for only 15 feet of net productive sand and another lease is brought into the unit and given credit for 30 feet of productive sand, that the lease with the 15 feet of sand will have approximately, or just half the unit credit that the 30 foot lease [fol. 212] has. Right now, those two leases of different sand thickness are having the same allowable.

The effect of unitization will be to substantially reduce the current income of the tracts that have a lesser sand thickness than the average. In order to cushion the changeover from a current rate of income which may be higher than the rate of income which is provided for in this unit agreement, there is in the unit contract a provision for accumulated payment to those certain leases that have less than—substantially less than the average equity and which are now enjoying a disproportionately high allowable. That adjustment is provided for in the unit contract as part 2 of Exhibit B. The general provision applies to tracts Nos. 56, 57, 58, 64 and 65. The accumulated payment that is to be made to those four tracts is, of course, an accumulated payment in which the royalty owners will also share as the working interest in that lease shares.

Q. There are five tracts?

A. There are a total of five such tracts.

Commr. Armstrong: That is the point I was trying to get over awhile ago. The royalty owner gets exactly the same thing as the lease owner gets all of the way through?

The Witness: That is correct, Mr. Commissioner. You might say he gets the same treatment that the royalty owner gets all of the way through down the line.

By Mr. Williams:

Q. Go ahead.

[fol. 213] A. The contract in respect to this accumulated payment intends to give during the first year of the unit

operation, an excessive payment of 100 per cent of the unit equity to those five tracts.

As an example, we might consider a tract that has a unit equity of 2 per cent. 2 per cent is the unit equity, let us assume, for one of those five tracts. The contract provides that in the first year, this said lease in question shall receive a payment of 4 per cent of the unit production and in the second year shall receive a payment of 75 per cent more, which is 3.5 per cent. Then, that scales down—after the first year it scales down and the second year it scales on down, the third year, the fourth year, and in the fifth year this tract will get 10 per cent more than is coming to it on its unit equity. It will get a payment of 2.2 per cent.

So, for five years, the first five years of the unit operation, those five tracts which are now enjoying a disproportionately higher rate of income, will get that much more unit income than is assigned to the tracts, but beginning in the sixth year—beginning in the sixth year, this particular tract which I am using as an example will receive less than its share of the unit income, and the contract provides for a payment of 50 per cent. In the sixth year, this will only get 50 per cent of 2 per cent. It will make a deficiency payment then of 50 per cent and that deficiency payment is made until the advance payment that [fol. 214] was made is wiped out.

You see, this adjustment is only a temporary thing. It doesn't give to that tract any more than its share. It simply provides for a cushioning, to cushion the working interest owner and the royalty owner from this period of high income over to the period of lesser income. It makes an advance payment for five years, and in the sixth year, and thereafter, the payment is less until the advance payment is returned to the unit owners.

Q. Does that adjustment, Mr. Kaveler, result in any ultimate gain or loss to a tract by virtue of that process?

A. Ultimately, there is no net gain or loss to that tract.

Mr. Jones: That is objected to as a conclusion of the witness.

Chairman Bond: Overruled.

Mr. Jones: Exceptions.

Chairman Bond: Exceptions allowed.

A. There are two more things about that adjustment which should be considered.

Commr. Armstrong: Would this tract ultimately produce more oil, in your opinion, if unitized, than otherwise?

The Witness: All of the tracts, Mr. Commissioner, will get a greater revenue as a result of unitization.

Commr. Armstrong: All of them will?

The Witness: Yes, sir. In this particular tract we are talking about which is at the 2 per cent level for five years [fol. 215] it is going to get paid a little bit more. Then, for a number of years it is going to be paid less until the advance payments are held back in equal share, and then that tract will go back to the 2 per cent line and ride on out to the end of the actual operation.

Commr. Armstrong: That tract, even though getting more money today, will get more money ultimately under the unitization than it would under the present method of production?

The Witness: That is correct, Mr. Commissioner, and in connection with that point, I will make this observation: There are tracts out there which have only 15 or 20 or 25 feet of oil sand that are producing at the rate of 200 barrels per day per week. Those tracts have a high rate of income but their life, by virtue of that fact, is very short. There are many of these leases of the type I am thinking about now which, in a period of seven years, would be done for, but under unitization will carry on for another 20 years of productive life. They will get much more ultimately than they would get if the present state of affairs continued.

By Mr. Williams:

Q. Let me ask you another question, Mr. Kaveler. Does your company have any interest in those tracts with respect to which this adjustment is made?

A. The Phillips Petroleum Company has no interest in any of those five tracts.

Q. From that standpoint and your experience as an engineer, is it your opinion that such an adjustment, as to

[fol. 216] the owners of those tracts, is fair, equitable and reasonable?

Mr. Bond: That is objected to as calling for a conclusion of the witness?

Mr. Jones: The same objection.

Chairman Bond: Overruled.

Mr. Bond: Exceptions.

Chairman Bond: Exceptions allowed.

A. I think some consideration should be given to those people whose income is going to be substantially reduced as a result of this unitization, and I think that the advance payment provided for in the contract is fair to those royalty and working interest owners who now have that high rate of current income.

There is another point that I should mention and that is this: The advance payment which is to be made to these five leases is to come from only that amount of oil which the unit will be able to produce in excess of what might be regarded as the normal production of the same in the absence of unitization. For example, in the first year, the advance payment that is to be made to these five tracts can be made only out of that oil which is produced in excess of 5,225 barrels a day. These five leases will not get that advance payment unless the unit operation causes an increase in oil production at a rate in excess of the present rate of production. That was put in there on the theory that an advance payment of that nature should not be made out of oil that normally would come to the owners [fol. 217] of the field, but the advance payment should be made out of only that portion of oil which it produced as a consequence of the unit operation.

Q. I believe you testified, Mr. Kaveler, that the current rate of production of oil from the pool is 5200 barrels a day?

A. Yes, sir.

Q. Is it your opinion that under unitization the current allowable would be increased?

A. It is my opinion that the production of oil from the Medrano sand, which is 5200 barrels per day now, can be increased to at least 6600 barrels per day following unitization, and I would recommend that the Commission

grant us a unit allowable of 6600 barrels per day, which is 1400 barrels per day more than the current production, for the reason that as a result of the unit operation, 6600 barrels per day can be produced without waste and with less waste than the 5200 barrels per day is being produced currently.

Q. And it is out of that excess production that this adjustment is to be made, is that correct?

A. That is correct.

Q. Mr. Kaveler, in the division of the unit production as set out in this plan of unitization, I believe you testified that the engineering procedures outlined by you were followed?

A. That is correct.

Q. Was there such a thing as looking at individual tracts [fol. 218] and taking from one tract a certain percentage and adding it to another tract, or making adjustments by way of swapping interests on any individual tracts in the unit?

A. There was no taking from one tract and giving to another. There was no swapping of interests as between parties. The entire procedure in the determination of equities was based upon a straightforward application of well established engineering principles, and was conducted in such manner that each tract and each lease stood on its own feet and was evaluated on a basis of the recoverable oil and gas and current income of each of those leases.

Mr. Bond: We object to the question and move the answer be stricken for the reason that it is a conclusion of the witness, the best evidence is the actual core data that was taken by geologists in determining the thickness, porosity and permeability of the well.

Chairman Bond: The Commission will receive the testimony of the witness at this time with the understanding that all of those facts and figures will be furnished when you go to cross examination.

Mr. Bond: Exceptions.

Chairman Bond: Exceptions allowed.

By Mr. Williams:

Q. Now, the result of those procedures are the percentages shown in part 1 of Exhibit B, I believe?

A. Yes, sir.

[fol. 219] Q. Mr. Kaveler, from your experience and knowledge as an engineer and from your knowledge of the facts and conditions existing with respect to the Medrano sand of the West Cement Pool, I will ask you if you have an opinion as to the fairness and reasonableness of the percentages of interest so arrived at and as to their relative accuracy as between tracts.

Mr. Bond: That is objected to for the same reason.

Chairman Bond: The witness can tell whether he has an opinion or not.

A. I have an opinion.

Chairman Bond: Now, when he asks for it, you can object.

By Mr. Williams:

Q. What is that opinion, Mr. Kaveler?

Mr. Bond: I object to the witness' opinion for the reason that is a matter for the Commission's jurisdiction and determination and not for that of the witness, and that the facts themselves speak for themselves, and that the Commission should make the determination as to whether or not the division is equitable.

Mr. Jones: I object on behalf of the Palmer Oil Company.

Chairman Bond: The Commission will make the decision but the Commission would like the opinion of experts on which to base an opinion, and therefore the testimony will be received and exceptions allowed.

Mr. Bond: Exceptions.

Mr. Jones: Exceptions.

[fol. 220] A. In my opinion, the equity distribution arrived at and contained in B, part 1 of Exhibit 52 is fair and is equitable and is accurate within reasonable limits of engineering computation. I think that one may make that statement of an opinion for the particular fact that the West Cement Medrano sand has been very fully ex-

plored, very carefully studied, there is a long history and accurate history of the behavior of the pool, and I know of no engineering geological facts which have not been established by the drilling and production history of the pool, and I think for that reason that the distribution of equity in the West Cement Medrano pool can be made with an unusual degree of reliability, and in that respect the pool and the proposed unitization is outstanding in character.

By Mr. Williams:

Q. From your experience and knowledge and qualifications as engineer, and from your knowledge of the West Cement Medrano pool and your knowledge of the procedures used to arrive at these percentages of division, do you have an opinion as to whether or not those procedures are in accordance with good sound accepted engineering principles?

A. I have an opinion, and I think that they are consistent and conform to good sound and accepted engineering practices.

Mr. Williams: Now, if the Commission please, so far as this witness is concerned, we have covered the engineering background of the present method of operation and of the proposed operations of the benefits to be obtained and also the engineering factors entering into the division of unit [fol: 221] production. There are a number of other provisions of the plan which we of necessity must explain for the purpose of the record and for the benefit of the Commissioners and all concerned, but most of those other provisions deal with operating problems as distinguished from engineering and geological problems.

It would be our suggestion at this stage of the proceedings that, although it is somewhat out of order, opposing counsel, if they desire to cross examine with respect to this phase of the testimony so as to maintain a certain continuity with respect to engineering and geological facts, and then when we have completed that we will then enter into the other operating problems of the plans, which we think will be economic in character as to general interest, because they deal primarily with the operator, and most of the operators have agreed to those plans.

Chairman Bond: With respect to the wishes of counsel, if they want to let you complete the case and cross examine later, the Commission will follow that procedure. If not, they may cross examine now.

Mr. Jones: I don't care what particular order it takes, but before I can adequately cross examine this witness I would like to recall Mr. Montgomery and Mr. Wood, who previously have been on the stand, and the additional testimony by cross examination I feel would be of great benefit in our cross examining Mr. Kaveler.

[fol. 222] Mr. Williams: Would you like to recall them now in advance of your cross examination of Mr. Kaveler?

Mr. Jones: That is what I would like to do.

Chairman Bond: Very well, you may recall them in the order you desire to recall them.

(Witness excused.)

A. J. Montgomery, was recalled and testified further as follows:

Cross-examination:

Mr. Jones: Is the Commission ready to proceed?

Chairman Bond: You may proceed.

By Mr. Jones:

Q. Are you the Mr. Montgomery who was on the stand here, I think December 9th?

A. I am.

Q. And at that time you did qualify, didn't you, as an expert geologist?

A. I attempted to, yes, sir.

Q. And you were sworn at that time?

A. I was.

Q. I call your attention, Mr. Montgomery, to Exhibit 24. I think that is still on the rear of that blackboard. Will you explain what that black line is that encompasses this field?

A. There is a line showing the outer limit of the Medrano producing sand zone.

Q. And upon what basis did you determine these outer limits?

[fol. 223] A. With the structural contour obtained by the drilling of the wells in the West Cement pool.

Q. At any place or places represented by this particular black line on Exhibit 24, are there what is known as a geological condition, as a fault?

A. There are.

Q. I want you to explain to the Commission what a fault is.

A. Well, a fault is a disruption vertically of your strata in the earth.

Q. What effect does it have upon the strata generally?

A. When we have a continuous bed rock going through the country, and through distortion either an uplifting or sinking of the formations of the rock would not bend that steeply, then you would have a break in that strata, and that is called a "fault." The amount of breakage or slippage is called a throw of that fault. In some places we have a horizontal movement with the vertical movement.

Q. If you had such a common bed broken by a fault, the actual effect of such a fault would be—well, in a layman's standpoint, to disjoint the bed, wouldn't it?

A. If the faulting were such that they were displaced entirely it would be, if they were disconnected.

Q. Now, in your study of this West Cement Medrano pool did you find any faults that might extend in any direction across this pool?

[fol. 224] A. Yes, sir.

Q. How many such faults did you find?

A. Four.

Q. By these faults does this particular pool divide into separate entities or separate segments?

A. They are called "segments" because there was some division that we could determine by the faults that were present there.

Q. As to whether these faults or segments are used as a method of describing each part of the field you were in, and is that found out from the well control on that thing?

A. No, sir; these faults die out up structure, so your maximum throw was on the lower part of the structure, and

when you get up on the high part it is the opinion—it is my personal opinion those faults are of no such magnitude; there is no disruption or breaking of those beds and they are not disconnected.

Q. Did you prepare any maps of your study of this field which show the approximate location of these faults?

A. We did.

Q. Do you have the maps here with you?

A. Yes.

Q. I wonder if you will produce them at this time. I would like to identify each of these maps you have by an exhibit number, and when I finish with them I want to introduce them as part of the cross examination.

A. I have one here that denotes the structural condition [fol. 225] of the wells, and this is the control point on top of the sand.

Mr. Jones: I would like to have that marked.

(The map referred to was thereupon marked Exhibit 54 for identification.)

By Mr. Jones:

Q. Mr. Montgomery, I call your attention to Exhibit 54, and I will ask you to explain in detail by name or other identity each line that may show either a fault covering the West Cement Pool, or its outer limits.

A. This is the north fault, or at least a non presence of Medrano sand to the north.

Q. That line to which you point is the north limit of the West Cement Pool?

A. That is right.

Q. As even indicated on your Exhibit 24?

A. That is right.

Q. Before we proceed any further, this map that you prepared as a part of your investigation, you and your committee prepared?

A. This is a map prepared by the geological committee working on the West Cement Medrano unit, of which I was a member.

Q. You may proceed to explain it.

A. This line here has been defined by the Commission as being the limits of the gas zone.

Q. And that is the northeast and north——

A. North and northeast line, that is right. This line, as on Exhibit 24, is determined by the well control, with the information being worked out by this committee of geologists.

[fol. 226] Q. That is the southwesterly boundary limits of the pool?

A. South and southwest boundary, yes, sir. I mentioned about these faults. We have an offset in that outline. While the throw of these faults is quite large down here, when we go up here toward the crest of the structure, the throw of those faults is relatively small and the field down here is made up of several small faults up in this area here.

Q. According to your map the fault the farthest toward the east is called the Edwards fault, is that correct?

A. That is right.

Q. The next one toward the north and west is the Hartshorne fault?

A. That is correct.

Q. And the next one is the Sterba fault?

A. That is right.

Q. And the last one is the Sherritt fault?

A. That is right.

Q. Did you find faults at each of these locations as indicated by this Exhibit 54, prepared by your committee?

A. We found them by well control, yes, sir.

Q. When you say "by well control" you mean that there were dry holes drilled at certain points, which would otherwise produce if the Medrano sand were not dry?

A. In some cases a fault was what caused the dry hole, but the fault went through several producing wells. In [fol. 227] other words, the wells, such as this one, the Sherritt well No. 1, crossed the fault, hit it in the second, but when it reached the Medrano sand the fault had no particular bearing on where the sand was because the fault had already been crossed.

Q. But you did find faults at each one of these locations?

A. In the drill hole, yes, sir.

Q. How were you able to tell just at what point or points these faults were not true faults?

A. What do you mean by not a true fault?

Q. I mean to define a true fault as one that would cause a complete break in the common bed.

A. I believe you have a faulting that is a little bit out of line up here.

Q. Well, would you mind to take the blackboard, Mr. Montgomery, and explain to us how faults operate?

A. In other words, a well being drilled here at some one of those faults, the slippage is not vertical. In other words, the distance this is here, this is the up throw side and this is the down side. If you drew a vertical line, that would be a fault, then the well that was drilled, that is where we find the fault.

Q. In other words, you have a vertical fault where your structure would come up end on end?

A. You can have vertical faults, or you can have overturn faults. These faults at Cement are normal faults with a relatively low angle of dip in the fault.

[fol. 228] Q. Is that what you call an overturn fault?

A. No, sir; the overturn fault is commonly thought of as an over thrust in the fault. In other words, preceding beds were over thrust over the lower bed.

Q. Could you draw a diagram showing what the normal fault, such as these at Cement, would look like if you could see them?

A. Say this is the Medrano sand; this is your upthrow side. In other words, the amount of throw in the fault is that which we might see when we cross these rock beds, there is another bed of rock here, which would be up here, and the relative distance from here over to there if your fault was all in one spot. Then you know the fault by this well crossing here, these lines, some rock in that section there. You can tell from this well exactly where the well crosses the fault.

Q. You say these faults in the Medrano pool are normal faults?

A. Yes, sir.

Q. Don't they slope in one direction or another according to whereabouts you are located on the structure? Let us look at Exhibit 54. Let us take the Sherritt fault up here. Toward what direction does the Sherritt fault slope?

A. The different fault planes slope to the northwest.

Q. To the northwest?

A. Yes. In other words, the contributing factor to this faulting was the fact that the high point of the structure is here, while these faults down here at the slope of the fault [fol. 229] plane would vary to the southeast farther than it is from the high structure.

Q. On the Sherritt fault then the slope is to the northwest?

A. On the fault plane, yes.

Q. What angle fault is that?

Q. That is hard to determine. There is no way you can determine it with only well control.

Q. You do know there is a fault there?

A. Yes.

Q. There is no way to determine the angle?

A. No.

Q. How do you know it is not a perpendicular fault?

A. Oh, you would hardly ever get through it then. You can tell it by sequence of beds in the well that was drilled.

Q. What well, if any, leads you to that conclusion with respect to the Sherritt fault?

A. The No. 1 Sherritt of the Gulf.

Q. What wells, if any, indicated to you that there was a fault at that particular location?

A. Well, I just mentioned this No. 1 Sherritt.

Q. Where there any other wells there that might have indicated the existence of that fault?

A. No, sir.

Q. Well, how can you locate that fault at that particular location then?

[fol. 230] A. From the fact that the well did cut the fault.

Q. Do you mean you examined some samples or something of that sort and came to that conclusion?

A. Samples and electric log, yes, sir.

Q. Isn't it possible, if you drill right on a fault, to secure a dry hole, and subsequently drill another well a few hundred feet away from the fault and get a producing well?

A. For instance, in this little diagram, if one were to be unfortunate enough to drill a well there they would get a dry hole, and that has been done at Cement in three or four wells I can think of.

Q. In a layman's view of the thing, and that is what mine is strictly, that would be right in the center of the fault?

A. No.

Q. Well, it is right where your break occurs?

A. It is right where the break occurs relative to the Medrano sand.

Q. That is correct. If there is such a break as that which you have just described on this diagram, what connection can there be between the Medrano sand from one side to the other?

A. As mentioned before, lots of times this break is not the whole thickness of the sand, and, as previously stated, these faults, as they migrate through the Sherritt area around across the structure have less throw in them.

Q. What do you mean by "throw"?

[fol. 231] A. Throw is this amount of movement vertically that the Medrano sand had along that fault plane.

Q. Do you have anything on Exhibit 54 that would indicate the throw?

A. By contour you usually can tell how much throw we attributed in those wells and how much throw was present at different locations on the structure.

Q. Could you explain to us, beginning again at the Sherritt fault, what your throw is on that fault across that particular pool?

A. In other words, we came to the conclusion this ought to be the line of the fault, the line across there. These contours are 100 foot contours on it of the Medrano sand, and I will take the nearest one to this well, which is minus 4200 below sea level. It intersects the point of contour on this side of this fault at approximately 4,450, so that at that point there would be roughly 250 feet of throw at that given point.

Q. Yes; if at such given point there would be no contact between the Medrano sand in the area north and west of the fault or in that area south and east of the fault, if your computation is correct.

A. If the break is absolutely right, that is correct.

Q. In preparing this map did you not originally divide the field into different segments, or separate tracts for the purpose of coming to your conclusions?

[fol. 232] A. I don't follow you there.

Q. Didn't your committee formerly call the tract in the extreme northwest segment A?

A. I think so, yes.

Q. And the tract immediately then to the south and east segment B?

A. That is right.

Q. And the next tract segment C, and the next tract segment D and the next segment E; wasn't that terminology used?

A. We had them separated. I don't know that that lettering is exactly the same as we used, no.

Q. Calling your attention to the Sterba fault, which way is the slope of that fault?

A. As you call the term, the "slope" of it, do you mean the dip of the fault plane to the northwest?

Q. In other words, it dips toward the same direction as the Sherritt fault?

A. Did you say the Sterba fault?

Q. The Sterba fault.

A. The Sterba fault dips to the southeast, the fault plane.

Q. Then the fault plane at the Sterba point dips in the opposite direction to the fault plane of the Sherritt fault?

A. Not exactly, but generally that is true.

Q. Do you know anything about the angle of the dip of the Sterba fault?

[fol. 233] A. No, sir.

Q. Calling your attention to the Hartshorne fault, which direction is the plane or fault dip?

A. To the southeast.

Q. And I assume again you know nothing about the angle of that particular fault?

A. No, sir.

Q. And calling your attention to the Edwards fault, which direction did that fault dip?

A. To the southeast.

Q. Now, assume that in front of your experience as a geologist, assuming these faults to be at the place indicated, and that in each instance where you show the contour line there would be shown a break of at least 100 feet or more, isn't it a fact that these faults would actually divide up this pool into five separate and distinct segments?

A. It is possible that it could, except from our experience with close drilling on the Edwards lease here.

Q. We are looking at the Edwards fault?

A. Talking about that fault and that fault alone, we found out we could come down here, and while we may have a fault, not giving the figures just exactly, but say you have something like a 600 foot fault down here, we go up into these wells where several wells were drilled in close together and we find out those faults, instead of having one major break, had as many as five or six of 50 to 60 feet until you gradually accumulated the maximum throw [fol. 234] you had in one place down here. It was our reasoning that that was a minor fault there, as you go off structure they seem to go into one major fault like present on the Sterba fault here, and using that as a criterion, it is our opinion as you go up there until the sand pinches out to the northeast, anyway, that those minor faults will practically be non-existent on top of the structure.

Q. Of course, on your map here you do show the faults as existing clear across this particular pool?

A. That is right. We had no basis to stop them.

Q. There is no way in which you could determine as to the present contact there might be between one segment and another at any place along those faults, is there?

A. No, sir. It is true that if every ten acres had been drilled in this pool that the information would have been more complete, but with the information at hand you cannot. You could even possibly get into the angle of those fault planes and as they dip if you had wells every ten acres.

Q. Now, I notice on the Sterba fault you show three dry holes and under these dry holes are written the words "absent by faulting." Does that mean you actually drilled to a depth where you normally would have encountered the Medrano sand, but did not find it?

A. That is correct.

Q. You conclude on that basis that was definitely a fault [fol. 235] along those lines?

A. That is right.

Q. On the Hartshorne fault you show one dry hole drilled in the line of the fault, "absent by faulting", and I presume you have the same answer to that?

A. That is correct.

Q. Now, Mr. Montgomery, did your geological committee prepare any sort of a written report that might have been submitted to the engineering committee?

A. They did.

Q. Do you have that written report with you here?

A. No; I do not.

Q. Do you know where such a report may be?

A. We have it in our files, yes.

Mr. Jones: I presume you can produce that, can you, Mr. Williams?

Mr. Williams: I don't know that I have seen it.

A. There was a report written by the geological committee to go to the engineering committee.

By Mr. Jones:

Q. You can produce that report if given time?

A. Yes; we have it.

Mr. Jones: We would like to have it at some later date. I would like to introduce into evidence Exhibit 54.

Mr. Williams: I have no objection.

[fol. 236] (Exhibit No. 54 is made a part of the record and is set out in proper numerical order in the exhibit binder accompanying and made a part of this record.)

Mr. Jones: Now, I would like to identify these other maps.

(Map referred to was thereupon marked Exhibit 56 for identification.)

By Mr. Jones:

Q. Now, I will ask you, Mr. Montgomery, to examine Exhibit 55 and state what this exhibit is.

A. This is a map similar to the previous one, except that it is contoured on the base of the Medrano sand.

Q. This map was also prepared by the committee of geologists that worked on this pool?

A. That is correct.

Q. It likewise shows each of the faults, that is, the Ed-

wards fault, the Hartshorne fault, the Sterba fault and the Sheritt fault?

A. That is correct.

Q. The only actual difference in the maps is the contour lines, is that correct?

A. The determining point, in that this one is on the base of the sand, and the other one is on the top of the sand.

Mr. Jones: I would like to offer Exhibit 55 in evidence.

(Exhibit No. 55 is made a part of the record and is set out in proper numerical order in the exhibit binder accompanying and made a part of this record.)

[fol. 237] Q. Now, Mr. Montgomery, I will ask you to examine Exhibit 56 and state to the Commission what this exhibit represents.

(The map referred to was thereupon marked Exhibit 56 for identification.)

A. This is an isopachous map showing the thickness of the Medrano sand with gas.

Q. What does isopachous mean?

A. It means lines of equal thickness.

Q. This purports to show the thickness of the gas net?

A. Thickness of the net gas sand, yes, sir.

Q. I wonder if you would explain that a little more in detail?

A. In other words, the points of control as to how much net sand is in each well. After that is determined, then it is purely a matter of contouring it. In other words, the points on that line there are 125 feet thick in gas sand.

Q. That is your contour ling which is marked 125 feet?

A. That is right. It was contoured on 25 foot infervals.

Q. When we see a contour that says "150 feet" that means the gas sand was 150 feet on that contour?

A. That is right, and go on it until it reaches the next higher one, which is that case would be 175.

Q. Incidentally, I forgot to ask you, on Exhibit 55 what was the distance between your contour lines?

A. 100 feet.

[fol. 238] Q. Exhibit 56 also shows these several faults, is that true?

A. That is right.

Q. The Edwards fault, the Hartshorne fault, the Sterba fault and the Sherritt fault?

A. That is right. If you notice it is this side of this fault plane.

Q. That is on contour 75?

A. There is no break across there at all. In other words, the thickness on each side of that fault is 75 feet.

Q. Well, that is assuming that your contour lines are exactly where they should be.

A. Well, irrespective of the fact that could be 1/15th or 1/32nd of an inch down here, they would still join across there.

Q. How did you determine exactly where to place each of these contour lines?

A. By a simple rule of contouring. You take these points with numbers and you can contour anything that has numbers on it. Those are the simple rules that govern contouring.

Q. Even at that a contour can always be off several feet?

A. We could probably take these same points and pick 20 men up here and there would be 20 different sets of contours on those different points.

Q. The only purpose of this map was really to show the depth of that gas sand at particular locations?

A. The thickness of it.

[fol. 239] Q. I mean the thickness of it at that particular location.

A. That is right.

Mr. Jones: I would like to introduce Exhibit 56.

Chairman Bond: It may be received.

(Exhibit No. 56 is made a part of the record and is set out in proper numerical order in the exhibit binder accompanying and made a part of this record.)

Mr. Jones: I would like to have this map identified.

(The map referred to was thereupon marked Exhibit No. 57 for identification.)

By Mr. Jones:

Q. Calling your attention to Exhibit No. 57, I would like for you to explain to the Commission what this last exhibit represents.

A. This is a similar map. It shows an isopachous map, except as to the Medrano sand as pertains to oil content.

Q. In other words, it shows the thickness of the oil sand in a particular location.

A. That is right.

Q. How is it contoured?

A. At 25 foot intervals.

Q. This likewise shows the faults that we have referred to insofar as they pertain to the oil sand?

A. That is right.

Mr. Jones: I would like to offer Exhibit No. 57.

(Exhibit No. 57 is made a part of the record and is set out in proper numerical order in the exhibit binder accompanying and made a part of this record.)

[fol. 240] By Mr. Jones:

Q. Mr. Montgomery, were these exhibits 54 to 57, both inclusive, included as a part of your report which was furnished to the engineering committee?

A. That is right, they were.

Mr. Jones: I believe that is all I want to ask him.

Mr. Page: I would like to ask one question at this time.

Chairman Bond: All right.

By Mr. Page:

Q. Through what sections, Mr. Montgomery, does the, what is known as the Sterba fault run?

A. Through section 33.

Q. What part of 33, please?

A. Through the northeast quarter.

Q. The northeast quarter. All right. Just that one?

A. No; I believe it trends in a northwesterly direction through the northwest of 34.

Q. The northwest of 34?

A. Yes, sir.

Chairman Bond: The Commission will probably not have time for the cross examination of another witness.

A. Did you say the Sterba or Sherritt fault?

By Mr. Page:

Q. Just that second one down from the top.

A. This one?

Q. Yes; is that the Sterba?

A. Yes; that is the Sterba.

[fols. 241-242] Q. That is the one?

A. I understood you to say the Sheritt. That is the south east of 34.

Q. The southeast of 34?

A. And southwest of 35.

Q. I see. Thank you.

A. And the southeast of 35.

(Witness excused.)

Chairman Bond: The Commission will recess this case until the 6th, I believe it is the 6th and 7th of January.

(Whereupon, at 4:40 o'clock p.m., December 23, 1946, the hearing was recessed until January 6, 1947.)

[fol. 243] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title omitted]

ORDER CONTINUING CAUSE—Filed January 6, 1947

This cause came on for hearing before the Corporation Commission of Oklahoma on the 6th day of January, 1947, at 10 o'clock, a.m., in the Commission's Court Room, Capital Office Building, Oklahoma City, Oklahoma; the Honorable Reford Bond, Chairman; Ray O. Weems, Vice-Chairman; and Wm. J. Armstrong, Commissioner, sitting.

When the case was called, it was apparent that the Commission would be unable to hear same because of other matters having previously been set for hearing on this date. The Commission is therefore of the opinion that this cause should be continued until some future date.

Order

It is therefore ordered that this cause be and the same is hereby continued from January 6th, 1947 to the week [fol. 244] beginning February 25th, 1947, at 10 o'clock, a.m.

Done and performed this 6th day of January, 1947.

Corporation Commission of Oklahoma, (S.) Reford Bond, Chairman; (S.) Ray O. Weems, Vice-Chairman; (S.) Wm. J. Armstrong, Commissioner.

Attest: (S.) Tom McMurray, Secretary.

[fols. 245-246] Before the Corporation Commission of the State of Oklahoma

[Title omitted]

Transcript of Hearing—Jan. 6, 1947

(Pursuant to recess on December 23, 1946, the hearing was resumed at 10 o'clock a.m., January 6, 1947, parties present and presiding as heretofore, and the following further proceedings were had:)

Mr. Williams: We would like, in view of the condition of the docket, and in the presence of the Commission and with Mr. Green here, to decide upon a time when this Cement case can be heard. It is rather a complicated problem.

Chairman Bond: We will give you gentlemen any date that is open.

(Consultation between counsel and the Commission.)

Chairman Bond: This case will be set for February 25 to 28, inclusive, 1947.

(Whereupon, at 12 o'clock noon, January 6, 1947, the hearing was recessed until February 25, 1947.)

[fol. 247] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title omitted]

RESPONSE AND PROTEST OF B. E. JOHNSON—Filed February 5, 1947

Comes now B. E. Johnson and for his response and protest to the above application and petition filed in the above entitled cause, alleges and states:

(1) That he is the record owner of an undivided Twelve Twenty-eighths (12/28ths) of the seven-eighths (7/8ths) Working Interest In and To the oil and gas lease covering the following described real estate and premises, to-wit:

> "The East one half (E/2) of the Southwest Quarter (SW/4) of Section 34, Township 6 North, Range 10 West, situated in Caddo County, Oklahoma."

That said lease is now being operated by "The Stephens Petroleum Company" with the consent of the said B. E. Johnson.

(2) That the said B. E. Johnson has never at any time entered into any operation agreement or contract with the said Stephens Petroleum Company for the operation of said lease insofar as his said interest is concerned. That [fols. 248-249] he has not signed the application and petition filed herein and has not at any time authorized anyone to sign the same on his behalf so far as his said interest is concerned.

(3) That he protests and objects to the plan, petition and application filed herein for the following reasons, to-wit:

> (A) That the Act, to-wit: House Bill No. 339 of the 1945 Legislature of the State of Oklahoma by virtue of which said plan and application are proposed is unconstitutional, void and illegal and is of no force and effect.
>
> (B) That said plan submitted in said application and petition is inequitable insofar as the interest of this

protestant is concerned. That he desires to introduce evidence in support of this protest.

Wherefore, this protestant respectfully prays this Honorable Commission to deny the application and petition filed herein and for such other and further relief as may be proper.

—— ——, Protestant; —— ——, Attorney for Protestant.

[File endorsement omitted.]

[fol. 250] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title omitted]

RESPONSE AND PROTEST OF VIRGINIA McINTYRE AND M. L. McINTYRE—Filed February 5, 1947

Comes now Virginia McIntyre and M. L. McIntyre and for their response and protest to the above application and petition filed in the above entitled cause, alleges and states:

(1) That they are the record owners of an undivided two twenty-eighths (2/28ths) of the seven-eighths (7/8ths) Working Interest In and To the oil and gas lease covering the following described real estate and premises, to-wit:

"The East one-half (E/2) of the Southwest Quarter (SW/4) of Section 34, Township 6 North, Range 10 West, situated in Caddo County, Oklahoma"

That said lease is now being operated by "The Stephens Petroleum Company" with the consent of the said Virginia McIntyre and M. L. McIntyre.

(2) That the said Virginia McIntyre and M. L. McIntyre have never at any time entered into any operation agree-[fol. 251] ment or contract with the said Stephens Petroleum Company for the operation of said lease insofar as their interest is concerned. That they have not signed the application and petition filed herein and have not at any

time authorized anyone to sign the same on their behalf so far as their said interest is concerned.

(3) That they protest and object to the plan, petition and application filed herein for the following reasons to-wit:

(a) That the Act, to-wit: House Bill No. 339 of the 1945 Legislature of the State of Oklahoma by virtue of which said plan and application are proposed is unconstitutional, void and illegal and is of no force and effect.

(b) That said plan submitted in said application and petition is inequitable insofar as the interest of this protestant is concerned. That he desires to introduce evidence in support of this protest.

Wherefore, this protestant respectfully prays this Honorable Commission to deny the application and petition filed herein and for such other and further relief as may be proper.

—— ——, Protestant; —— —— Attorney for Protestant.

[File endorsement omitted.]

[fol. 252] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title omitted]

TRANSCRIPT OF HEARING—Filed Feb. 25, 1947

(Pursuant to recess on January 6, 1947, the hearing was resumed at 2:00 o'clock p.m., February 25, 1947, parties present and presiding as heretofore, and the following proceedings were had:)

Chairman Bond: The Commission has before it this afternoon CD No. 1308, Petition for creation of the West Cement Medrano Unit, having for its purpose the unitized management, operation and further development of the West Cement Medrano common source of supply of oil and gas in Caddo County, Oklahoma; the defining of the unit area

thereof and the prescribing of the plan of unitization applicable to such unit and unit area.

Are you ready, gentlemen?

Mr. Williams: The applicants are ready, if the Commission please.

Mr. Adams: We are here.

Chairman Bond: Do you have any exhibits to offer?

OFFERS IN EVIDENCE

Mr. Green: Yes. Let me offer as Exhibit No. 58 a copy of the order issued by the Commission continuing the cause from January 6, 1947 to this time and place.

[fol. 253] As Exhibit 59 I would like to offer the original of a letter signed by Noel Evans, 1239 East 30th Place, Tulsa, Oklahoma, letter dated December 30, 1946, addressed to the Corporation Commission, which sets out the interest owned by Noel Evans in the Medrano pool, and his ideas about this application. In other words, he says in the letter he is for the application.

As Exhibit No. 60, I would like to offer a letter signed by William H. Harding, dated December 30, 1946, addressed from Oklahoma City, Oklahoma, to the Corporation Commission, in which he says, "I am a royalty owner under the proposed West Cement Medrano unitization plan, and I wish to go on record that I am in favor of the unitization of this pool."

I would like to offer as Exhibit 61 a letter received by the Commission, and received January 4, 1947, from the Little Nick Oil Company, in which that company sets out that it is a royalty owner and "We wish to express our approval of the pooling plan proposed by various operators of leases in this pool.

As Exhibit No. 62, I wish to offer a letter signed by A. A. Schreiber, of Oklahoma City, an attorney, 406 Hales Building, letter addressed to the Corporation Commission, which states, "As an owner of mineral rights in and under the several tracts of land in the West Cement field of Caddo County, this is to advise you that I am in favor of the Medrano sand wells in this pool being communitized."

[fol. 254] As Exhibit 63, I wish to offer in evidence a letter signed by Mary E. Rookstool, 847 Northeast 20th

Street, Oklahoma City, letter addressed to the Corporation Commission, dated December 23, 1946, in which she sets out she is an owner of mineral interests under five different tracts as they are described in the letter, and states, "Consequently I am interested in obtaining the most money that is possible from the reserves under these mineral interests, and I am of the opinion that the unitization program covering the Medrano sand of the West field of the Cement pool is the only program under which this may be accomplished. Therefore, I respectfully request that the Corporation Commission issue the order for the unitization."

As Exhibit No. 64 I offer in evidence a letter signed by Farris L. Rookstool, of 828 Northeast 16th Street, Oklahoma City, Oklahoma, which is a different address from that of Mary E. Rookstool. The letter is quite lengthy, but he states he has an interest in the pool and the said communication says, "Therefore, as an owner of a considerable amount of royalty under the unitized acreage, and as a geological engineer, I respectfully request that you issue the order covering such unitization."

(Exhibits numbered 58 to 64, both inclusive, are made a part of the record, and are set out in the proper numerical order in the exhibit binder accompanying and made a part of this record.)

Chairman Bond: Are there any witnesses present who were not sworn at the last hearing? If there are, let them [fol. 255] stand up and be sworn.

(No response.)

Chairman Bond: You may proceed, gentlemen.

Mr. Adams: I believe at the first hearing before the Commission counsel for applicants stated that all geological and engineering information constituting the basis of the reports of the so-called engineering and so-called geological committee upon which the proposed unit plan was prepared would be available to all interested parties for review, in order that they might readily determine whether or not the proposed plan adequately would accomplish the purpose for which it was apparently filed and

protect all equities. Representing the Palmer Oil Corporation, we took these gentlemen at their word, and have made requests for the information on which both the engineering and geological reports were prepared for review, but the information has been refused to us. We merely wanted to make that statement in order that the Commission possibly will be a little more patient with us in our cross-examination of the witnesses, in view of the fact that the requested information has not been available to us.

Mr. Williams: What information has been requested that has not been furnished you? I believe there is some misunderstanding. I believe your engineer did meet with them, and they were willing to furnish anything he desired, and did furnish him anything he asked for.

[fol. 256] Mr. Adams: Well, our engineer is here, and would know whether or not the statement I have made is correct. The information with respect to the basis for determining the porosity was requested; the information on which the engineers' report was based was requested, and both were refused. In fact, there was a refusal again yesterday evening.

Mr. Williams: What was the second?

Mr. Adams: An opportunity to see and examine the core analysis. In fact, everything we have requested has been refused.

Mr. Williams: What else did you request? You say "everything."

Mr. Adams: Well, Mr. Kaveler is here, if there is any doubt about it. I merely wanted to explain to the Commission why we may go into this a little more painstakingly than we would otherwise.

Mr. Williams: May I state to the Commission the original statement was correct; that we will make available to anyone in interest any of the basic information in connection with this program. Now, if a request for information has been made, and parties think it has not been complied with, there is some place a misunderstanding. There are different companies to which you refer. I believe Mr. Gray was there, I believe that is correct.

Mr. Gray: I was at one conference.

Chairman Bond: In order that there may be no misunderstanding, make your request in open court and let [fol. 257] the record show what your request is, and then counsel can agree or disagree with you in open court. But regardless of any differences mindwise between counsel, the Commission will give you all of the time that is necessary to try your case.

Mr. Adams: Thank you, Your Honor.

Under date of February 6, if I may make this just as a statement, 1947, a letter was written by Kepplinger & Wanamaker, who are the engineers employed by the Palmer Oil Corporation and Mr. L. L. Gray of the Gulf Oil Corporation, in the First National Bank Building, Tulsa, Oklahoma, which I will be glad to read into the record from a copy:

"Confirming our conversation of today with Mr. Aubrey C. Godbold, Chairman of the Engineer subcommittee for the West Cement Medrano pool, this is our request that if it is convenient in the near future we would like to meet with the Engineer Committee as Mr. Tom Palmer's representatives and discuss the basic work of the Committee. We would like to go over the nine points which are set out on pages five and six of the report entitled "Reservoir Study of the West Cement Medrano pool, dated May 27, 1946.' We would like to have this meeting with the Committee or part of the Committee at an early date so we may have sufficient time to prepare our remarks for Mr. Palmer before the Corporation Commission on February 25."

Now, the nine points are those which counsel has—I think there is a copy of this engineering report, and the [fol. 258] nine items are those set forth on pages 5 and 6 of the Engineers' report. To put it into the record; first, the isopachous maps of the oil and gas zones as prepared by the Engineer Subcommittee.

I am not sure I can pronounce all of these words. Second, is isopachous map of the pool with the average pressures in both oil and gas zones.

Third, core data.

Fourth, information on which reservoir fluids was considered.

Fifth, pressure data.

Sixth, production data.

Seventh, the data from which oil originally in place at time of oil discovery was determined.

Eighth, reservoir performance calculations.

Ninth, reservoir economics.

I believe that constitutes all of them.

Chairman Bond: Very well. What do you gentlemen say about these records? Were they available, or did you refuse them, and if so, what were your reasons?

Mr. Gray: I was present at the first conference they had on it.

Mr. Williams: At the end of that conference it was decided that Mr. Kaveler would talk it over with Mr. Palmer. I don't recall of any refusal that was actually made. There are quite a number of items mentioned there that have been distributed to Mr. Palmer. I think the isopachous map and structure map, and the economics [fol. 259] shown in the report is the only economics we worked on. So, I think we might go through and by process of elimination find out what he does not have. My personal recollection at the time the request was made was that he did not select very definitely just what information he wanted.

Chairman Bond: Do you want to go through a process of elimination, or the Commission should go through each item by item?

Mr. Adams: I merely wanted to call your attention to why our cross-examination might be more lengthy than otherwise.

Chairman Bond: If that is your purpose the Commission will proceed to proceed. The Commission thought probably you wanted those records.

Mr. Adams: We would like to have them.

Mr. Williams: May I say to the Commission and counsel, if there is any information you desire, if you will convey to me your request I will see that it is supplied. If, through any misunderstanding you have not gotten all you think you are entitled to, and it takes an undue length of time to cross-examine the witnesses, I will bear with you.

Chairman Bond: If you make that request in open court,

and you are entitled to have it supplied, the Commission will give you a subpoena duces tecum so you can get the information.

Mr. Adams: At the time the last hearing closed, I believe Mr. Montgomery was on the stand.

[fol. 260] Chairman Bond: Very well.

A. J. Montgomery, recalled, testified further as follows:

Cross-examination.

By Mr. Adams:

Q. I wonder if you would mind putting the Exhibit Map No. 54 on the blackboard?

A. All right.

Q. You now have on the board maps Exhibits 54, 55, 56 and 57, is that correct?

A. That is right.

Q. Each of these maps, among other things, shows the location of how many faults crossing the so-called pool?

A. There are four faults shown on the map which was in the outline of the producing area.

Q. I would like for you to explain the depth to which a fault normally runs.

A. That is rather indeterminable, in that you are faced with how deep the wells are drilled.

Q. Well, the depth of the wells would have nothing to do with the depth of a fault, would they?

A. You talk about how far down into the earth a fault might penetrate?

Q. Yes.

A. That is an unknown factor.

[fol. 261] Q. So far as is known, the faults extend in a more or less uniform plane?

A. No; that is an error.

Q. That is an error? How do they extend?

A. A fault is actually, in field experience we find a fault is more or less a zone, rather than a slick knife cut break. The actual direction of this fault may vary at different points down through the ground in connection with the

rock formation, as to their compactness, well in this direction, or the softness of that head of the fault.

Q. Isn't it understood that they generally extend in the same direction as they go down in the formation?

A. Not necessarily, no, sir. No.

Q. No one knows, then, how they extend, except insofar as development may disclose, is that correct?

A. That is correct.

Q. Would you say that a fault is not a knife cut section; it is a section perhaps 100 or 150 feet across?

A. I would say that would probably be a maximum. I think in some instances it could practically be a knife edge, but as it went into different components of the bed rocks that fault would change its characteristics, and it would probably not run in a straight line exactness.

Q. The experience in this field showed these faults all of the same depth, isn't that true?

[fol. 262] A. Not other than with some wells they have cored, that is, in the Brushed zone that we considered the fault in cores in which the rock dips just vertical therewith. That has not been cored in enough wells to know whether that would be a common occurrence in this field or not.

Q. If you will, turn to Exhibit 56, Mr. Montgomery. What does Exhibit 56 show to be the average thickness of the oil bearing portion of the Medrano sand in this so-called pool?

A. Well, Exhibit 56 is a thickness map of the gas zone.

Q. Oh, I beg your pardon. 57 is what I want. I am sorry. What, from Exhibit 57, would you say is the average thickness of the oil bearing portion of the sand in the respective sand segments of the West Cement pool?

A. I have never had occasion to work out the average thickness of the sand. We leave that up to the engineer.

Q. You prepared this map, did you not?

A. That is correct, yes, sir.

Q. Or had it prepared under your supervision?

A. Yes, sir.

Q. Well, it purports to show the thickness, does it not?

A. It does.

Q. But you are unable to say what the thickness is?

A. Not the exact average thickness. I could look at the map and give you an approximation of it.

Q. Now, the fault lines that are shown on Exhibits 54 [fol. 263] to 57, inclusive, would indicate that there merely is a line—a narrow line definitely there as between the separate faults. That is not true, is it?

A. Not in exactness, no, sir.

Q. Now, those faults, as they extend into the earth, and through the Medrano sand section, go at an angle, is that right?

A. They are going at an angle the last information we had on them, yes, sir.

Q. Will you step up to Exhibit 57, and after observing it, what is the distance in feet between the top of the Medrano at the top of the fault line—and the top of the Sterba fault line and the top of the Medrano at the bottom of the fault plane on the Sterba fault?

A. This map would not show that.

Q. Which map does show that?

A. The map just before.

Q. All right; let us go back to 54.

A. Would you repeat that question again, please?

Q. What is the difference or the distance in feet between the top of the Medrano on the west side of the Sterba fault and the top of the Medrano on the east side of the Sterba fault?

A. Do you have reference to this point of the structure in the southeast quarter of 34, or in the northwest of 36?

Q. The Palmer lease and Sterba lease along the west line of the southwest quarter of 35.

[fol. 264] A. The upper or west side, the upthrow side of the fault would be minus 4200, and on the east, or the downthrow side, it is approximately 45--6500 feet.

Q. In round figures there is about 3500, is that right?

A. That is correct.

Q. At an angle of what; about 60 degrees or 70 degrees?

A. I would not make any attempt to state what the angle of the hade of the fault was at that point.

Q. Well, it is at an angle, isn't it?

A. It is undoubtedly at an angle, yes.

Q. And that angle slopes to the southeast, is that correct?

A. That is correct.

Q. That fault was located on the Palmer-Sterba lease by Palmer No. 5 well, isn't that correct?

A. No. 5 and No. 6 Sterba.

Q. Isn't No. 5 the one that is in the approximate center of the Sterba lease?

A. No. 5 is near the east line.

Q. Yes; No. 6 is the one that is in the approximate center, then?

A. That is correct.

Q. And that discloses a fault, rather a fault there, is that what you call it?

A. It denoted the presence of a fault at that point, yes.

Q. Because there was no oil or gas discovered in the [fol. 265] Medrano sand in that well?

A. As we define the Medrano sand, there was no Medrano sand found in that well.

Q. That is what I mean, because that is what I would call a throw of the fault. Is that what you would so designate it?

A. Well, it is an unfortunate condition, in that when that well was drilled it was on the downthrow side of the fault, in which just at the point of hading the sand crossed the upthrow. The upthrow side of the sand was above the point of crossing.

Q. What do geologists call that plane that is in there, that line between the two producing formations?

A. That is the fault itself.

Q. You just call it the fault?

A. Yes; as I understand your question.

Q. That is a fault plane, isn't it?

A. That is right; it is the fault.

Q. If you refer to the same map, Palmer No. 5, is that correct, on the east side of the Sterba lease?

A. That is right.

Q. Now, that well was drilled to sufficient depth to have encountered the Medrano sand had it been there, isn't that correct?

A. That is right.

Q. And the Medrano was not encountered?

A. It was not.

[fol. 266] Q. And from that you assumed that that well was drilled on the Sterba fault?

A. The well crossing the Sterba fault on such position on the fault plane you have reference to, that it did not encounter the sand.

Q. So, in preparing your map across the Sterba line you reflected the fault line as running directionally from the Palmer No. 5 well to the Palmer No. 6 well, and on in a direct line across the Phillips-Oaks lease, is that correct?

A. That is correct.

Q. And then on toward the northeast, what is the next well that is reflected to determine the location of the Sterba fault?

A. Magnolia No. 2 Henley in the southeast quarter of 35.

Q. That well was drilled to a sufficient depth to have located the Medrano formation had it been there, isn't that correct?

A. That is right.

Q. The Medrano was not found in that well?

A. That is right.

Q. Indicating that well was drilled on the plane of the fault between the two formations, one up on the fault and the other down on the fault?

A. The Medrano sand is actually the same formation.

Q. Well, the two locations of the Medrano, one on one side of the fault line that is higher up on the plane, and the other is lower on the plane, and because of the angle of [fol. 267] the plane there is a space between them that these wells were drilled, making it impossible for them to produce from the Medrano. Isn't that correct?

A. That is correct.

Q. Mr. Montgomery, I hand you Exhibit 65, and if you will, please put it on the board, and I will ask you to state whether or not that exhibit fairly illustrates this fault plane of which we have been speaking.

A. It is a fair representation of it. I have not checked these minus depths against our map to see whether that is our exact interpretation of them. I presume it was.

Q. You can check that very quickly, can't you, against your exhibit, Mr. Montgomery?

A. May I see whereabouts on the lease it was taken?

Q. I believe it shows on the map it was taken on the east side of the lease.

A. Was it taken against the property line?

Q. Yes.

A. Was it taken right on the lease line? The top of the sand is shown approximately where we show the top of the Medrano from our map, yes.

Q. That is on the Magnolia-Henley lease, is that right?

A. That is correct.

Q. Now, the bottom Medrano there, what is that reflected on there, what lease?

[fol. 268] A. It is along the east line of the Magnolia-Henley lease, in the southeast quarter of 35.

Q. Both on the same lease?

A. Yes; right alongside of the lease line.

Q. That is in the southeast quarter of Section 35, is that correct?

A. That is correct.

Q. Now, referring to Exhibit 65, can you illustrate with a pencil how the Magnolia-Henley should have been there drilled to result in being unable to find the Medrano sand section?

A. There is already a pencil line, and you have shown it for me, in that it would be in the——

Q. Do you have a pencil?

A. —horizontal area. A well so drilled vertically would miss the Medrano sand.

Mr. Adams: I would like to have these exhibits marked.

(The instruments referred to were thereupon marked Exhibits 65, 66 and 67 for identification.)

By Mr. Adams:

Q. Mr. Montgomery, I hand you Exhibits marked 66 and 67, and I will ask you to state whether or not they fairly represent the location of the Medrano sand with respect to the Sterba fault at the locations of the Palmer-Sterba wells Nos. 5 and 6, located in the southwest quarter of section 35 here involved.

A. Are these quarter sections purported to be at the [fol. 269] wells in each case?

Q. Well, one of them is at the west side of the line and the other one at the east side of the line.

A. I can't see from here which is which.

Q. That is to say, this one would be on the east side of the Palmer lease?

A. Which is the southwest quarter of section 35.

Q. That is Exhibit 66?

A. Yes. Both of those represent it pretty well.

Q. The one referring to the location of the Medrano on the Sterba fault at the west side of the Palmer-Sterba lease is Exhibit 67, isn't that correct?

A. That is right.

Q. Now, referring to Exhibits 66 and 67, it would be very easy to drill a well through the fault plane there illustrated without encountering the Medrano sand formation, isn't that correct?

A. Yes; and it might be even more easily than there illustrated, in that we do not know the angle of the hade in the fault.

Q. In other words, Exhibits 65, 66 and 67 have shown the fault plane at an angle of perhaps—what would you say?

A. Oh, roughly 15 or 20 degrees.

Q. And that fault plane might be as much as 45 degrees, isn't that correct?

A. Probably in its progress down through the earth at [fol. 270] points it would be even greater than that.

Q. Now, could you, by looking at those exhibits 65, 66 and 67, estimate the width of the fault plane in which drilling may be conducted without encountering the Medrano formation?

A. You could take these and measure those, but they are only someone's personal idea, and I would hesitate to make them myself.

Q. Now, these fault planes, whatever their width is, are disclosed as being barren areas between the two differently located Medrano sand formations that exist on the separate sides of the fault plane.

A. We believe that exists at the present time, it seems, from that indication.

Q. From that indication there it is barren?

A. Yes.

Q. There is no proof to the contrary, is there?

A. Not a bit, based on the structure.

Q. Do you k-ow of any other place on the Sterba fault where the fault plane is not barren? I mean your answer, Mr. Montgomery, left that in doubt.

A. If you would add with such magnitude as to any entirely separate sand, then there would be a connection across the fault. The fault zone in itself does not constitute a barrier, if you have permeable rock in direct connection with each other.

Q. If you refer to those maps, Exhibits 56 and 57, there [fol. 271] is no connectio shown thereon of the Medrano formation on one side of the Sterba fault and the Medrano formation on the other side of the Sterba fault, isn't that true?

A. That is correct, except for one more contour. If you will notice that these contours up here are dashed.

Q. Are you on the Sterba fault?

A. That is the northeast extremity of the Sterba fault as we have it marked on the map, in other words, in Section 36 our contouring is dashed in there to show we have no contour.

Q. In other words, you don't know, isn't that right?

A. We don't know.

Q. And all of the information that is known with respect to the Sterba fault is that it is—it constitutes a barren area that completely separates the Medrano sand formation on the west and the Medrano sand formation on the east side, isn't that true?

A. According to the map, if you were to take those contours literally that would be true, yes, sir, but in the geological profession I believe most of them would verify that when contours are only dashed it indicates a lack of definite contour.

Q. Well we could only go on the information we now have, isn't that true?

A. That is correct.

Q. And there have been three wells at least drilled on the Sterba fault?

[fol. 272] A. That is correct.

Q. And every one of them disclose a barren area, isn't that correct?

A. That is correct.

Q. Now, referring to the Edwards fault, the Edwards fault is the next fault east—is the second fault east, rather, from the Sterba fault. Is that correct?

A. Will you repeat the question?

Mr. Adams: Will you read it?

(The last question was read by the reporter.)

A. That is right.

By Mr. Adams:

Q. You had some contours from which you determined the location of the Edwards? That is right, isn't it?

A. Yes, sir.

Q. What were those contours?

A. Amerada No. 1; Edwards-Magnolia No. 4, 5, 6 and 7, Edwards, all located in the Northwest Quarter of Section 1, 5 North, 10 West.

Q. Were all of those wells dry?

A. They were not.

Q. I beg your pardon?

A. They were not all dry, no, sir.

Q. But they do show the existence of the fault, is that correct?

A. All of the faults.

[fol. 273] Q. All faults? In other words, in the Edwards fault there may be a series of faults?

A. There was a series of faults in the northeast part of the northwest quarter.

Mr. Adams: Will you read that answer, please?

(Last answer read by the reporter.)

By Mr. Adams:

Q. What section?

A. The Northwest Quarter of Section 1, 5 North, 10 West.

Q. Were there any of these wells to which you have referred drilled in the Medrano formation?

A. There was one.

Q. What were such wells?

A. The No. 6 Edwards-Magnolia.

Q. Did that reflect the direction of the throw of the fault?

A. On the fault plane it did.

Q. And which way was that directed?

A. To the southeast.

Q. Now, these other wells to which you referred, how did they furnish information from which you determined the location of the fault, the Edwards fault?

A. By the loss of the stratagraph section, as indicated on those Exhibits 65, 66 and 67. In other words, the well lost circulation some places during the drilling of the well, which indicated that the fault was there.

Q. I want you to take any one of those exhibits and illus- [fol. 274] trate—take Exhibit 65, Mr. Montgomery, and illustrate on the blackboard your answer. Now, if I correctly understood you, the fault plane is at an angle to the southeast. Is that right?

A. That is right.

Q. And that these other wells that you say disclosed the existence of this fault were drilled at a location so that they merely penetrated the Medrano formation at the point where the fault plane cut out across the end, so to speak, and from that you were able to determine that they intersected the fault. Is that right?

A. Your question is not stated exactly the way you want it, but I think I know what you are talking about.

Q. You state it.

A. In other words, normally there are some other beds of rock up here. You will notice the difference between these lines vertical here, they are supposed to represent approximately this distance between the Medrano sand as represented by the fault. There is below the Medrano sand another formation here.

Q. What exhibit is that?

A. 65.

Q. All right.

A. This well drilled on this line, note the normal thickness between this bed rock and this bed rock, say 1500 feet, where this bed rock would be 2000 feet.

Q. Would you put at the first bed rock to which you [fol. 275] referred let us call that A on this exhibit.

A. All right, sir.

Q. And the second bed rock to which you refer there as being below the Medrano sand, let us call that B on this exhibit. Now, in your answer, if you will, refer to it so the record will show.

A. In other words, the shortness of the distance between the bed A and bed B encountered in this well, and the fact the Medrano sand was not present in there, the normal distance between bed A and B would be what we have lost in that hole, which would be lost in your columnar section and be worked up in that local area by other wells being drilled in there.

Q. In other words, you know where rock bed A and rock bed B should be on one side of the fault, should be in relation to each other in a normal sequence of the beds, as long as they are on the same side of the fault?

A. That is correct.

Q. If he finds them in a substantial different location, one with respect to the other, then you know that you have encountered one rock bed on one side of the fault, and the other rock bed on the other side of the fault.

A. Then we at least start looking for the thing that caused it.

Q. So that the only information that is now available is to the effect that the Edwards fault extends through the Medrano sand formation approximately in the manner you [fol. 276] have shown on your exhibits 54, 55, 56 and 57?

A. That is correct.

Q. And such information also shows that there is a barren area existing between the Medrano sand on the one side of the fault and the Medrano sand on the other side of that fault?

A. No; I don't believe it is that conclusive.

Q. There is not any other facts known, whether, for instance, on this diagram here, as I mentioned before about the series of faults to the northeast, which is reflected in wells four and five, I believe both six and seven also, there are several faults or minor throw up the hole, we don't know how those faults will behave, or how they will show up when we get to the Medrano proper? What I am trying to say is, the only known fact is that there is

a fault plane there. What is the difference there in the depth of the Medrano on the east side of the Edwards fault and the depth of the Medrano on the west side of the Edwards fault?

A. The maximum throw we have on the Edwards fault on the west side would be minus 4240, against minus 4800, which is about the west central part of the southeast quarter of the northwest quarter of section 1. But there is also shown on the map——

Q. There is a——

Mr. Williams: Let him finish his answer.

A. —that as you progress to the northeast by the drilling of the Potter No. 1 Davis, which would be in the northeast [fol. 277] quarter of section 1, that we have then a 3640, against 3700 sub sea data, which would indicate that your fault is still having a great throw here in the northwest quarter of the section 1, approximately half a mile, you can only give it 70 feet as you go up toward the crest of the structure.

Q. Will you refer to your map, Exhibit 54, the Magnolia-Lindsey well in the southeast quarter of Section 36? Do you find it?

A. Yes, sir.

Q. What did that well disclose, what facts, if any, that would have any bearing on the location or the width of the Edwards fault?

A. We don't attach any particular significance to the well.

Q. You do not? Refer to the Hartshorne fault, and that is the one that exists between the Sterba fault and the Edwards fault, is that as definite fault as either the Sterba or the Edwards fault?

A. The maximum throw is considerably less on the Hartshorne fault than either the Edwards or the Sterba fault, if that is what you have reference to.

Q. Well, if it exists there would not be as wide a barren area in that fault as there would be in either the Sterba or the Edwards fault, is that correct?

A. I don't believe one could answer a question such as that, no.

Q. Of course, you don't know how wide the barren area [fol. 278] is, is that a fact?

A. Not in any case.

Q. What you mean is that there is not the difference in feet between the Medrano sand on one side of the Hartshorne fault as compared to the other side of the same fault, as there is with relation to the same sand or the Sterba fault, for instance? That is what you mean, isn't it?

A. That is right, yes, sir,

Q. What is the difference in the top of the Medrano on the east and the west side of the Hartshorne fault? Well, let us take the southeast corner of Section 35, as a point.

A. The southeast corner of Section 35, the top of the Medrano on the upthrow on the west side of the Hartshorne fault would be about 3910, while on the east side of the Hartshorne fault on the downthrow side it would be approximately 4050.

Q. This Hartshorne fault, while it may have been reflected from other developments, was confirmed by the Magnolia-Lindsey well, was it not, in the southeast quarter of Section 36?

A. The Magnolia No. 10 Lindsey in the southeast quarter of Section 36?

Q. Yes. Is that right?

A. That is right.

Q. Since this well to which we have just referred was drilled in, what would be shown by your Exhibit 56 to be the gas section of the Medrano sand, and since it was dry, [fol. 279] that would establish the fact that there was a barren fault area there, isn't that right?

A. That is correct. I might add that to my knowledge the well was not tested.

Q. I beg your pardon?

A. To my knowledge the well was not tested.

Q. It did not make a well?

A. It was drilled with rotary tools.

Q. It was plugged as a dry hole, was it not?

A. That is correct. They found no sand in the cuttings.

Q. You don't know of the Magnolia plugging any producing gas or oil wells?

A. I think everyone has done that.

Q. You think they have?

A. Yes.

Q. Do you have any prospects of the Magnolia going back and redrilling at that location expecting to get production?

A. No; I don't.

Q. Refer to the Sherritt fault, which is the next fault east from the Sterba fault—or west, I beg your pardon, the next fault west from the Sterba fault. Generally speaking, this Sherritt fault was located generally in the same manner as these other faults, except I don't believe on the Sherritt fault there were any wells drilled in the fault plane, I mean in the barren area between the location of the Medrano on one side of the fault and the Medrano on [fol. 280] the other side of the fault? Isn't that correct?

A. That is correct.

Q. Come and sit down now, Mr. Montgomery, will you? All of the fault lines, or faults that you show on your exhibits 54, 55, 56 and 57, the one that is shown more definitely than any of the others by dry holes that have been drilled to a depth sufficient to find the Medrano sand, is it not true that the Sterba fault stands out as definitely proven in that regard?

A. I believe we had three dry holes that were attributed to the Sterba fault.

Q. Now, Mr. Montgomery, bear in mind that I am not a geologist. Will you define, as a geologist understands it, what connate water is.

A. Connate water is the water that is present in the sand as it is deposited or laid down, and it has never been displaced.

Q. Is that water held in the oil bearing section unmolested, or how is it held?

A. My general conception has been that it was in the porous space between the sand grains in which pressure did not exert enough influence to drive it away.

Q. Connate water, then, does not come from any water zone that may be below the water-oil contact?

A. No.

Q. With respect to that zone.

A. Water that has moved into the producing formation [fol. 281] is then not connate water as to that local spot where it is then found.

Q. If connate water is present in the producing formation it is true, is it not, that it will be barred at the time of the initial production?

A. No; not necessarily. If that connate water was not moved out by the moving in of the oil and gas, and it has an incursion of that water to the porous space as such in which it is located, it does not readily come up and consequently is not produced when the well is put on production.

Q. Is there any method, then, to tell where water is produced with oil whether it is connate water or water that has come from below the water-oil contact?

A. Well, that would be rather difficult unless—it would be unusual in this country to think that a well would produce, say, 20 per cent of water which you could attribute to being connate water in its entirety. You could not do that. But there are wells that will make half a barrel of water and still be one-half of one half that could very easily be connate water.

Q. But if it made more than one-half of one per cent you would think it was not connate water?

A. I used that as an illustration, in that I would not know what the breaking point would be. I used it as a calibrating example, as one-half of one per cent and 20 per cent.

Q. What would be a fair percentage to assume that might be connate water, or if it ran over that the percentage would be water from below the oil-water level?

[fol. 282] A. I have never come into a condition like that, and I have never made a study of the problem.

Q. Now, of these exhibits, I believe it is 57 that reflects the water-oil contact. Which exhibit is it?

A. There are several of the maps, three of them that reflect the water-oil contact.

Q. Pick out one. I want to ask you some questions about it.

A. Exhibit 54 reflects it.

Q. I wish you would refer on Exhibit 54, then, to Phil-

lips-Margaret, in segment C, I believe you call it; which is segment C?

A. We don't have any segment C designated on the map. Phillips No. 1 Margaret is in the northwest quarter of Section 2, 5 north, 10 west.

Q. That would be in the segment line between the Sterba fault and the Hartshorne fault, is that correct?

A. That is correct.

Q. Can you tell from that exhibit to what depth that well was drilled?

A. No.

Q. Do you know of your own knowledge to what depth that well was drilled?

A. What you have reference to is the base of the sand, would be what you have in mind, I am sure.

Q. That is all right.

[fol. 283] A. The base of the sand in the No. 1 Margaret in the Northwest Quarter of Section 2 is minus 4615.

Q. And that well is producing from minus depth of 4493, is it not, the top of the sand?

A. That is correct.

Q. Is there any other well between the Sterba fault and the Hartshorne fault that was drilled to a sufficient depth to locate the water-oil contact?

A. There was not, to actually test the contact. The only well——

Q. That is the only well, isn't it?

Mr. Williams: Let him finish his answer.

A. That is the only well we had that made water in that so-called segment with the Amerada No. 1 Little Chief in the Northeast Quarter of Section 3, which encountered the top of the sand at minus 4835.

Q. Now, you know about the recent test that was taken on the Margaret well, do you not, to determine what per cent of water it was making compared to oil?

A. I don't know that.

Q. Assuming that the Margaret well on February 5, 1947, was shown to make 10 per cent water from the Medrano formation, would not that cause you, Mr. Montgomery, to correct your map there to show the water-oil

contact at a much higher depth than where you show it on Exhibit 54?

[fol. 284] A. No; because this map was made with the oil-water contact as it originally was.

Q. Did you have any information as to where it originally was, except as shown in the Margaret well?

A. Oh, yes.

Q. Where? Where did you have such information?

A. No. 2 Hartshorne of Amerada.

Q. Pardon me just a minute, but I mean between the Sterba fault and the Hartshorne fault.

A. As I mentioned before, there was no well to test the original oil-water contact.

Q. And that well is showing water where production is had from a minus depth of 4493 feet? That is right, isn't it?

A. That is the top of the sand. The base of the sand is—there is no reason to believe but what the base of the sand is not producing some production when the base of the sand is minus 4615.

Q. But you show on your map, Exhibit 54, water contact at minus 4741 feet.

A. That is where the committee, who worked on these problems, concluded it should be, and it was placed on the map.

Q. Just calculating it, it is about 200 feet below where there is any information to support it, isn't that true, Mr. Montgomery?

A. Well, the well made clean oil for some considerable [fol. 285] time at a minus deputy of 4615, and the top of the sand 4493, so that would only be, roughly, say, 125 feet from the base of the sard to where we compute the original water level.

Q. Well, if your map is off 100 feet it would make a lot of difference about the amount of oil in place under the Phillips-Margaret lease, would it not?

A. We don't believe the map is off,

Q. I say, if it was. I say, if it was it would make a lot of difference.

A. That would be correct.

Q. It would make over a million barrels difference in oil?

A. I wouldn't know how many barrels, but it would make some considerable number.

Q. It would make a lot of difference counterwise to what the Palmer-Sterba lease would be entitled to in relation to the presence of the total production or total recoverable oil in this so-called pool?

A. It would make considerable difference.

Q. Yes; it sure would. Refer to Exhibit 54, as it relates to the southeast segment shown thereon, south and east I guess you would say, of the Edwards fault, what was the oil-water contact as it is disclosed by the drilling of the Anderson Prichard-Pickard No. 1 well in the Southeast Quarter of Section 1?

A. The well you refer to did not drill to water.

Q. Do you know to what depth that well was drilled originally?

[fol. 286] A. To a total depth of minus 4282, or 24 feet in the sand.

Q. Assuming, Mr. Montgomery, that this well on February 4, 1947, made 42 per cent water and only 54 per cent oil in the production, would you say that the oil-water contact was below or about even with the production from that well?

A. I would say the water had probably encroached into the well, but I would not know what the water-oil contact was.

Q. Your map, Exhibit 54, shows in this particular segment oil-water contact of minus 4462—I can't read it.

A. 4465.

Q. 4465. So you would say, then, that the water had moved up in that particular segment about 200 feet?

A. I would say the water had moved up at about that well location at least that far, rather than through the whole.

Q. Do you think the water would just come up 200 feet at this particular well location and would not rise in the whole horizon?

A. It could very easily. In other words, rapid withdrawal in that type of production might cause water to cone laterally up into that well.

Q. Is that your conclusion?

A. That would be my personal conclusion, yes, sir. I don't think the water has moved uniformly up through that area, up to where that well total depth indicates the water might be.

Q. You don't think there is a possibility that your map [fol. 287] might be off about 200 feet as to the oil-water contact location?

A. The basis of the putting of that water-oil contact there was the fact that the Anderson-Prichard drilled No. 1A. Walker in the Southwest of the Northeast of 1, and that was all they encountered, water at minus 4510. At the time Anderson-Prichard drilled their No. 1 Pickard, that you have reference to, they were afraid of water, which caused them to stop after drilling only 24 feet in the sand. I believe on the preliminary map that was made by the geological committee we had arrived at a figure to use of 4450, minus. Subsequent to that Anderson-Prichard drilled No. 1 B. Prentice in the Northeast of the Southeast of the Southwest of Section 6, 5 North, 9 West, which drilled to a total depth of 4420 and did not encounter water, and at the present time I don't know whether the well is making much water or not.

By Mr. Williams:

Q. I think his question is if you regarded your map in error.

A. No; I do not.

By Mr. Adams:

Q. Mr. Montgomery, do you think that, geologically speaking, there would be oil in place between the oil-water content of the minus 4465, as shown on your map in segment—in the southeast segment, and from that to the top of what you refer to as the oil section in the Medrano sand?

A. I think there is considerable oil through that section, yes, sir.

[fol. 288] Q. Even though you say it has been flushed out approximately 200 feet of it by water that has come from below, you still regard that as oil bearing strata from

the depth of minus 4465 to the top of what your map refers to as the Medrano sand?

A. That is the reason I brought up the No. 1 B. Prentice, that has come up somewhat in defense of our map, that it is making clean oil, or it came in making clean oil. I don't know what the water percentage is, if anything, now.

Q. You have just referred to the Prentice B well. Where is that well located?

A. In the Northeast of the Southeast of the Southwest of 6, 5 North, 9 West.

Q. Would you regard that well as a fair example to use in determining the amount of oil in place in the Medrano sand section?

A. I do, yes, sir.

Q. Do you know what that well is capable of making today?

A. I do not.

Q. Do you know that on February 7, 1947, that well was only capable of making 12 barrels of oil a day?

A. The No. 1 Prentice; No. 1 B. Prentice?

Q. The No. 1 B. Prentice, yes, sir.

A. I don't know that.

Q. If that is a fact, do you still think that is a fair well to use in making the map determination which you have made?

[fol. 289] A. I do.

Q. Referring again to your map there, Exhibit No. 54, it is noted that taking the segments of the separate portions of the field as you have listed them on your map, and starting at the southeast corner, segment A has a water-oil contact of minus 4465, while the next segment to the west has an oil-water contact of 4741?

A. I believe that is correct.

Q. How did you determine the oil-water contact in the segment which lies between the Hartshorne and the Edwards faults?

A. The Hartshorne and Edwards fault was determined by Amerada No. 2 Hartshorne, which is located in the northeast of the northwest of the northeast of Section 2, 5 North, Range 10 West.

Q. Isn't it a fact they had water in that well at a depth of 4677 feet?

A. Producing water at that depth.

Q. Initially there was water at that top of the sand, in other words, is that correct?

A. Yes, sir.

Q. Irrespective of that fact you put the water level there at minus 4741 feet?

A. That is correct, because of the fact they cored the sand all the way through, and because the core—the core analysis, the original oil water contact was placed at minus 4741.

[fol. 290] Q. They had water in the top before they cored it, didn't they?

A. That is correct.

Q. Yes.

A. As I mentioned, this map shows the original oil-water contact, and is not meant to interpret where the water might have encroached at different parts of the field due to local heavy withdrawals or anything like that.

Q. That is the only well you have, isn't it, to determine the oil-water contact in that particular segment?

A. That is correct.

Q. The water was encountered there at minus 4677?

A. That is correct.

Q. Initially there had not been any withdrawal from the field at that time, and there had not been any from this well, had there?

A. No.

By Mr. Williams:

Q. But you did testify you had the core analysis of that well to the base of the sand?

A. I don't remember whether they cored completely to the base of the sand, because after they got into the water sand I don't believe they kept on coring then.

Q. But the core analysis did reflect the location of the original water level?

A. Very much so.

[fol. 291] By Mr. Adams:

Q. Will you produce that core analysis for us in the morning, Mr. Montgomery?

A. I don't have it in my possession.

Mr. Williams: We will locate it and have it.

By Mr. Adams:

Q. What is the significance, Mr. Montgomery, that the water level or oil-water contact, as it exists in the Hartshorne fault and the Edwards fault is minus 4741 feet, while the oil-water contact to the east and south of the Edwards fault is shown as minus 4465 feet?

A. It is probably because there is no connection down in the oil zone from one side of the Edwards fault to the other side.

Q. Doesn't that same situation exist in the gas cap?

A. It does not.

Q. It does not? What do you tie your answer to, Mr. Montgomery, that that does not exist in the gas cap?

A. For some reason or other the oil columned. The oil in the zone between the Edwards and the Hartshorne fault had a vertical oil column of 741 feet. The vertical oil column in the eastern part of the Medrano zone is 415 feet. It would be hard for me to explain why we do not have the same vertical oil fault up in the east part of the section as we have across these so-called faults, if there was not some connection in this gas zone, because this oil-gas contact became so near equal.

Q. Mr. Montgomery, your gas-oil contact east of the Edwards fault is shown on your map as minus 4450 feet?

[fol. 292] A. Sir?

Q. While the gas-oil contacts existing between the Hartshorne fault and the Edwards fault is shown as minus 4000 feet. That would be about 450 feet difference.

A. We are looking at different maps, because my oil-gas contact on that Exhibit 54 shows an oil-gas contact in the east part of the field at minus 4050.

Mr. Adams: Maybe our map is wrong.

Mr. Jones: The map shows 4450.

The Witness: No; our map shows 4000.

By Mr. Adams:

Q. Well, in any respect it is 50 feet, if I have to get some new glasses. Now, referring to the oil-water contact in the area between the Sterba fault and the Hartshorne fault, your map, Exhibit 54, shows that to be a minus 4741 feet. I would like to know how you arrive at that figure.

A. In the area between the Hartshorne fault and the Edwards fault the Magnolia determined nearly exactly the gas-oil contact on their Edwards lease, which is in the east half of the northwest of Section 1.

Q. Pardon me. I had reference to the map. You are reading it to answer?

A. I am reading it to them.

Q. O.K.

A. In turn the Amerada Hartshorne No. 2, in the Northeast of the Northeast of Section 2 established the water level.

[fol. 293] Magnolia-Henley No. 5 established the gas-oil contact, the well is located in the Southeast Quarter of Section 35. The Phillips Petroleum Company No. 7 Fletcher, in the Northwest Quarter of Section 34 established gas-oil contact. The water level—or the water was encountered in the Beemer well, Amerada, which is located in the Southwest Quarter of Section 33. They seemed to check fairly close with the water as found in No. 2 Hartshorne-Amerada in Section 2. Then with the next points, that is, Sections 33 and 34, together with the information in Section 2, with the fact that the Amerada in the Little Chief had water at minus 4835——

Q. Where is the Little Chief?

A. It is in the Northeast of Section 3—we concluded that the water level must be common through that area.

Q. You didn't have much to go on there, did you?

A. More than we have in lots of cases.

Q. Pardon?

A. More than we have in lots of cases.

Q. This Little Chief, or Big Chief well, whichever it was there, that is not a very good indication, is it, as to where the water level was? You just know the Amerada got water in that well at 4835 feet? That well was away low on the structure, wasn't it?

A. That is correct. It shows the fact that the water-oil contact originally was at least above that. Then the Mar-
[fol. 294] garet well in the Northwest of 2, which was drilled to 4615, passed the base sand there, and produced clean oil, and we knew it was at least that low, with the fact that the top of the oil zone was common on both sides of this area, why shouldn't it be the same.

Q. Well, of course, the Margaret made water.

A. It was not originally. It was not below the original oil-water contact.

Q. You don't know whether the water that is being produced in the Margaret well is from below the oil-water contact or whether it is connate water, do you?

A. If it is making very much water it is undoubtedly water from below the contact.

Q. You don't know how much it is making, do you?

A. No; I don't.

Q. So, about the best you can say as to the oil-water contact between the Sterba fault on the west and the Hartshorne fault on the east is just a mild guess, isn't it?

A. I believe it is based on fair information.

Q. What do you think it is today?

A. There probably isn't any oil-water contact that is common to the whole structure.

Q. What do you think it is today?

A. It would affect the oil-water contact by withdrawal.

Q. You show on your map it is a minus 4741, while the
[fol. 295] Phillips-Margaret well is making water at minus 4615. Now, where do you think that oil-water contact line would be today?

A. I would not hazard a guess.

Q. You would not want this Commission, then, to go on that kind of evidence in trying to locate the oil-water contact line and from that determine the amount of oil to which the Phillips-Margaret lease should be entitled in attempting to work out a percentage basis here as between leases?

A. I didn't work on that phase of the problem. All I was working on was geology.

Q. I mean you furnished the engineering committee your geology and they attempted to make an allocation based on your geology. Isn't that right?

A. As to where the original oil-water contact line was.
Q. Originally?
A. Yes, sir.

Mr. Williams: There will be a witness on the stand, an engineer, who will testify as to what use was made of the geological information this committee prepared, Mr. Adams.

Mr. Adams: I believe the record already shows that the geological committee made these maps, and it is these maps which form the basis for the engineering committee to make their computation. Now, I would like to find out if these maps are not a true picture of these so-called fields making up this unit at this time. I think we ought to be able to show that.

[fol. 296] Mr. Williams: The maps show the information reflected thereon, in other words, the original oil-water contact. We will later introduce witnesses for your examination who will explain how they did correlate and what use was made of that. This witness has not testified to that. He is primarily a geological witness.

By Mr. Adams:

Q. Mr. Montgomery, as a geologist, would you recommend to your employer, the Phillips Petroleum Company, that it drill a test well for the production of oil in the Medrano sand at a location in the Northeast Quarter of the Northwest Quarter of the Northwest of Section 2, if the water level, as shown by your Margaret well was minus 4615 feet today?

A. We were so confronted with that fact about three years ago.

Q. And you didn't drill a well?

A. I didn't recommend we drill it then, because I knew we were approaching the water.

By Mr. Williams:

Q. Does that mean there is no oil present at that location?

A. There is some oil there, but it is questionable whether it will ever pay out or not.

By Mr. Adams:

Q. That is right. Now, referring to the area or segment lying between the Sherritt fault and the Sterba fault, can you locate that, Mr. Montgomery? You show on your map an oil-water contact of a minus 4741 feet, which is [fol. 297] exactly the same depth as the oil-water contact shown on your map for the area between the Sterba fault and the Hartshorne fault. Now, will you explain from what you determined the oil-water contact between the Sherritt fault and the Sterba fault?

A. The Amerada No. 1 Beemer in the Northeast of the Southeast of 33 was the determining well.

Q. That well found water at minus 4680 feet, isn't that right?

A. I believe the well was drilled to a minus 4692, as reflected by our map, and did encounter water, yes, sir.

Q. 4692. But irrespective of that, you found the oil-water contact at minus 4741. So, that is not right, is it?

A. I believe I have mentioned this several times before, but this is the line showing the original oil-water contact.

Q. Well, that well made water at 4680—at minus 4680 originally, didn't it?

A. When it was completed?

Q. When it was completed.

A. But there had been a great amount of withdrawals through the field at the time that well was completed.

Q. How much oil had been withdrawn from the field when that well was completed? How much had been withdrawn from that particular segment?

A. I don't believe withdrawal from that particular segment would be necessarily all that influenced that well. I [fol. 298] think withdrawals from the entire field would be an influencing factor, and I would not hazard a guess how much had been produced at that time, both gas and oil.

Q. But you did hazard a guess where the oil-water contact was, didn't you?

A. With the information we had, yes, sir.

Q. Well, that was a guess, wasn't it?

A. It was a conclusion reached.

Q. I beg your pardon?

A. It was a conclusion reached by the committee of

geologists, taking all of the known facts at their disposal.

Q. When you say you would not hazard a guess, you mean you would not express an opinion?

A. That is correct.

Q. But you do express an opinion which places the oil-water contact there on your map as being approximately 68 feet lower than water was found in the only well where that oil-water contact was located, isn't that right?

A. That is when it was originally completed it was my opinion that was where the water-oil contact originally was.

Q. Now, let us look at the next segment, which constitutes the portion reflected on your map to the west of the Sherritt fault. You show there an oil-water contact of minus 4741 feet. Now, how did you arrive at that?

A. That was the Gulf No. 4 Sherritt well located in the Northeast Quarter of Section 33.

[fol. 299] Q. And that well found water at 4686 feet, didn't it?

A. Minus 4710. I believe they got water right before that depth was reached; something around minus 4706 or 4707.

Q. We will say it is 40 or 50 feet higher than that shown on the map for the oil-water contact. I mean the well found water——

A. About 35 feet, yes, sir.

Q. At least 35 feet?

A. Yes, sir.

Q. Now, I assume that you determined then, in preparing the map, that the water had moved up into the formation on the east side of the Sherritt fault 35 or 40 feet at the time of the drilling of the well to which you last refer.

A. Did you say to the east or west side?

Q. The west side.

A. At that particular location it had, yes, sir.

Q. And there had not been any coning of water to that particular well, because that well had not been produced?

A. Coning in this case could not be affected by production from that well alone. It can be affected by production from the whole reservoir.

Q. Is there any other well that might have been so produced as to raise the water level under the—what was that number—Sherritt No. 4 well when it was initially drilled?

A. Every well produced in the field might contribute to [fol. 300] that fact.

Q. It raised the water level. It would have raised it under the particular location where the Sherritt No. 4 was drilled?

A. It would be a factor if that water level was raised in the fault plane through the entire field.

Q. That Sherritt No. 4 is at least 666 feet from the nearest well, isn't it?

A. Yes; but the effect of producing wells 666 feet away in many instances will affect some other well or wells a mile away, in some cases it might affect them.

Q. Well, did you have any other well where the oil-water contact was located than the Sherritt No. 4 well that you just referred to?

A. That is the only one in Section 33, yes, sir.

Q. And from that you guessed, if you wish to say that, or you formed an opinion that the oil-water contact originates, prior to any production in the segment west of the Sherritt fault, was minus 4741 feet.

A. That is the only well we had.

Q. Now, in every instance as to each of these segments lying between these faults, the only definite marker as to the depth of the oil-water contact is several feet higher than you show on your map the oil-water contact originally existed, isn't that correct?

A. Will you state that question again, please?

[fol. 301] Mr. Adams: Will you read it, please?

(Last question read by the reporter.)

A. You are correct, in so far as saying that at the points those wells were drilled, that is the only point.

Q. Now, I believe you said a moment ago that the water had come up into the horizon—the oil bearing portion of the Medrano sand in one segment at least about 68 feet.

A. I said it had come up. I don't remember the exact distance.

Q. Well, whatever it was, would that not indicate to you, Mr. Montgomery, that the drive which occasions the production of oil was a water drive, if water would come up into the horizon to that depth?

A. Not necessarily. Not in my mind. I never made a complete study in full with the petroleum engineers as to the actual production of oil. So, I don't know whether I am actually qualified to tell that or not. It is my personal opinion that there is no marked water drive at Cement.

Q. What?

A. It is my opinion that there is no marked water drive at Cement in the Medrano zone.

Q. Well, if these reports referred to in Exhibit 54 extended on downward anyways near the approximate line as they have thus far been determined, there would not be any chance for the water drive, would there, with respect to [fol. 302] the segment lying between the Sherritt fault and the Sterba fault—I mean extending—I don't know, maybe I should say "laterally."

A. Do you mean horizontally across the field?

Q. That is right.

A. If those were projected on the same line they would eventually all meet.

Q. They would meet, wouldn't they?

A. There is, of course, one fallacy in this information. In the No. 3 Sherritt, which I believe my last statement there the explanation is, so far as well No. 1—that is the only well that determined that fault existed at that particular point. In other words, you can swing the fault back and forth here to here, but it would be hard to swing it across these wells, because there is no evidence whatsoever that fault is as it existed in No. 5 Fletcher in the Northwest of 34 or No. 2 Farwell in the Southwest of 27.

Q. You could not swing the Sterba fault around much, could you, because it is tied to three definite posts.

A. It has been our experience in the past that faults do not travel directly in a straight line, either vertically or horizontally.

Chairman Bond: Gentlemen, the Commission will recess until 10 o'clock in the morning.

(Witness excused.)

(Whereupon at 4:30 o'clock p.m., February 25, 1947, the hearing was recessed until February 26, 1947.)

[fol. 303] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title omitted]

Transcript of Hearing—February 26, 1947

(Pursuant to recess on February 25, 1947, the hearing was resumed at 10 o'clock a.m. February 26, 1947, parties present and presiding as heretofore, and the following further proceedings were had:

Chairman Bond: Are you ready to proceed?
Mr. Adams: Yes, sir.
Chairman Bond: You may proceed.

A. J. MONTGOMERY, recalled, testified further as follows:

Cross-examination (resumed).

By Mr. Adams:

Q. Mr. Montgomery, to clarify the record, it was called to my attention at the close of the testimony yesterday that the correct name for the slope of the fault plane is "hade." Is that right?

A. That is my understanding, yes.

By Mr. Kaveler:

Q. Hade angle.

A. Or a hade of the fault, yes, sir.

By Mr. Adams:

Q. It is also true, isn't it, that geologically the fault [fol. 304] plane has separated two sections of the Medrano, but which is barren Medrano, whatever its width be, such as the Sterba fault, is correctly referred to as the lateral displacement of the Medrano formation?

A. As I understand your question, what you mean, it would be the vertical displacement, what we refer to as the throw or fault.

Q. The vertical displacement?

A. That is correct.

Q. Isn't it lateral?

A. There is a lateral displacement and horizontal displacement when the hade angle—the angle of the fault plane is low angle, rather than near vertical.

Q. And so we have a fault plane of sufficient angle that there is a lateral displacement, as evidenced by these dry holes that were drilled on the Sterba fault?

A. That is true.

Q. Now, using an assumed water level, or water-oil contact that you have reflected on, I believe it is Exhibit 54, that would not necessarily mean that there is any communication between the various areas which are separated by the various faults with respect to the water underlying each of those separate areas or segments, would it?

A. Off structure, the magnitude of those faults is such that it does not appear that there is any connection in the [fol. 305] oil zone, particularly in a couple of the faults.

Q. To save a good deal of time and perhaps confusion, let us assume in the further examination that the area involved west of the Sherritt fault is referred to as segment A, the area between the Sherritt fault and the Sterba fault is referred to as segment B, the area between the Sterba fault and the Hartshorne fault is referred to as segment C, the area between the Hartshorne fault and the Edwards fault is segment D, and the area south and east of the Edwards fault is segment E. Will that be clear to you, Mr. Montgomery? I wonder if you would care to mark that on the map, Exhibit 54, so that we are not confused by it, and it will save a good deal of time.

A. I might say that the geologists in their report did not make the segments as outlined. Those were used by the engineers.

By Mr. Green:

Q. Repeat that so the reporter can get it.

A. The geological committee did not use these designation areas, A, B, C, D, and E. Those were used by the engineering committee.

By Mr. Adams:

Q. In the same relation as I have referred to them now?

A. I believe the engineering committee did use those, yes.

Mr. Williams: As I understand, you want them marked that way now for the purpose of convenient identification of the areas?

A. That is right.

By Mr. Adams:

Q. Mr. Montgomery, you are at the present time looking at a model which was attempted to be prepared to correspond with your Exhibit 54. This model will be difficult of identification in the record as an exhibit, but for the purpose of examination would you look at that carefully and see if that is a fair replica in model form of Exhibit 54.

[fol. 306]

A. I believe it would take me more than just a brief glance to look it over in detail as to the accuracy of it.

Q. Well, isn't there a photostat of Exhibit 54 placed thereon and from which the model is prepared?

A. It seems to be a fair representation of the map, yes.

Q. Now, your water level, I believe you said yesterday, in segment A, had raised, oh, about 60 feet since the initial production from the Medrano.

A. I believe you must have misunderstood me.

Q. Well, water was found, and the only water that has been contacted to determine the water level was minus 4686 feet, but your map shows the oil-water contact of minus 4741. Maybe I have not subtracted correctly.

A. No; that was not——

Q. That is segment A.

A. That was not the meaning of my answer, if you understood me that way. What I had reference to was the fact that water was found in that well at a total depth of 4692, and at minus 4692, was found immediately before the total depth was reached. The water found in the well was

[fol. 307]

not representative of the water level at that time, was probably only water encroachment, which probably is

not likely at all. It would be unusual for it to be anything like 4692.

Q. It was the only actual marker you have to determine the water level; the other is an assumed water level?

A. No.

Q. From what well were you able to determine the oil-water contact as minus 4741 feet?

A. The No. 2 Hartshorne, in the northeast of Section 2, was the critical well, so far as where the original water-oil contact was.

Q. That well is away down in segment C?

A. That is correct.

Q. That does not have any relation to the oil-water contact that is in segment A? What I want to know is, is there any other oil-water contact located by drilling in segment A than that where water was found at minus 4686 feet?

A. Well, I referred to No. 2 Hartshorne in the Northeast of Section 2, actually had water encroachment in the very top of the sand, which is comparable to where the water was found in the No. 1 Beemer in Section 33.

Q. Yes; but that Hartshorne well, as I said a moment ago is in segment C, it is in segment D, away down four faults there.

A. But the comparableness of the two wells is such that you could say that the water level was not at 4692, but [fol. 308] that it should be that nearly exactly with the No. 2 Hartshorne in Section 2, nor is it indicated whether in the meantime the Hartshorne in Section 2 has indicated water encroachment.

Q. When you say "water encroachment" you mean that as the oil is withdrawn the water will come up from below and fill that void, is that what you mean by "water encroachment"?

A. Water encroachment coming up field varies with the situation in the sand, does it in a very irregular manner.

Q. I know that, but that is what you mean by "water encroachment?"

A. That is right.

Q. That is, as the oil is withdrawn the water will come up from below and fill the void space to a certain amount, and

that has occurred, especially in—I mean in your oil-water contact line that you have assumed in these various segments?

A. That is correct, as of initial production.

Q. Then there has been a substantial displacement of oil by water in the lower part of the producing area—oil producing area in the Medrano sand?

A. There has been some, yes, sir.

Q. Well, "some." I want to determine what that "some" is. It is dependent upon the amount of oil that has been withdrawn, isn't it, in the various segments?

A. Oil and gas.

Q. Whenever the pressure from above is removed, I mean [fol. 309] that permits the release of the pressure that has been in the water zone, is that right?

A. That is correct.

Q. So that they keep somewhere near in balance, is that right?

A. They attempt to by moving in.

Q. There is a pressure factor in the water that is in place there, isn't there?

A. Yes, sir.

Q. Just the same as there is a pressure factor in the gas that is in the horizon above the oil zone?

A. That is true.

Q. So you would say with respect to the oil zone you have a downward pressure in the gas cap, and you have an upward pressure from the water that is below the oil zone?

A. That upward or downward pressure would be altogether dependent on the differential between the ones you are comparing there.

Q. What do you mean by "differential"?

A. It is natural that the higher pressure areas there—higher pressure fluid trying to get in the lower part of the low pressure area, irrespective of whether it is gas or water, which causes the movement to streak into the low pressure area.

Q. If you refer to Exhibit 54, the northeast quarter of Section 33, Sherritt No. 1 well would appear to have been [fol. 310] drilled in the Southeast Quarter of the Northwest Quarter of the Northeast Quarter of said Section 33. From your examination and study of this area, do

you have any opinion as to whether or not a commercially productive oil well from the Medrano sand might be expected to be procured if there was drilled a test well at a location in the Southwest Quarter of the Northwest Quarter of the Northeast Quarter of Section 33, immediately west of the Sherritt No. 1 well.

A. I would expect the Medrano sand to be obtained there, and it should contain oil.

Q. Do you think it would make a commercial well?

A. I have not had an occasion to check into that.

Q. Now, your maps there, Exhibits 54, 55, 56 and 57, show not only what is an assumed oil-water contact depth, but they also show an assumed gas-oil contact depth in each of the segments. Now, if you will refer to Exhibit 54, that shows in segment A that the gas-oil contact was determined as being at a minus 4000 feet. From what did you determine that oil-gas contact at that depth?

A. From a matter of deduction with the information we had.

Q. Was that determined from actual location of the gas-oil contact by drilling at that depth?

A. It was.

Q. Where?

A. Phillips Petroleum Company No. 7 Fletcher in the [fol. 311] Northwest Quarter of Section 34.

Q. Mr. Montgomery, I am talking about segment A, the well to which you referred in segment B, and it is separated from segment A by the Sherritt fault.

A. The fault in itself does not have enough throw to even disconnect it with the oil zone at the location where the fault was picked up.

Q. You have discovered the Sherriff fault in assuming the depth of the gas-oil contact in segment A, is that correct?

A. The well on which the Sherritt fault is based is No. 3 Sherritt in the Northeast Quarter of Section 33. The displacement of the fault at that point is less than the thickness of the sand. There is no basis to say that any place along that fault from actual information there is throw enough to disjoint the sand.

Q. That is on the Sherritt fault?

A. Yes.

Q. Well, assume that there is a substantial difference in pressures in the gas and oil zone on the east and the west side of the Sherritt fault, you are still of the opinion that they are fully communicating?

A. Probably "fully communicating" would be going to extremes, but there is undoubtedly some connection.

Q. Well, when you say "some connection", do you mean an effective connection, a door?

[fol. 312] A. It would hardly be classified as a "door."

Q. No; it would not, would it?

A. In other words, any type of connection is a connection, regardless of how small.

Q. It would not be an effective connection, would it, if there was a substantial difference in the pressures in the productive horizon of the two sides of the fault?

A, You are talking about effective connection as to what would happen in a particular week, a year, or ten years, or some period of time.

Q. Since the pool was discovered, let us say that.

A. There probably is some connection, and that has taken place since the pool was discovered.

Q. But would you say that, irrespective of the fact that the pressures on each side of that fault have been very materially different at all times since the oil was first discovered in the Medrano on each side of the fault, is that your opinion?

A. I would still say they are connected.

Q. Effectively connected?

A. Effectively connected, yes.

Q. If that is true, why would not the pressures equalize?

A. They would in time.

Q. Well, "time" is a long space, isn't it?

A. Time is the element that would take them to equalize. What that time element would be, I would not know.

[fol. 313] Q. Would you say one year or a hundred years?

A. The basis of effective connection might be materially affected by the differential between that area. In other words, if the pressure in one area was 1500 and the other

one would get down to 300, then you might break the connection down and it would take place lots faster than it would if the differential was 100 pounds.

Q. In other words, it might break a door through there?

A. It might enlarge that door.

Q. There might be a channel there now as big as a pin, but if you had sufficient pressure on one side and lack of any pressure on the other, of course it would enlarge that pin hole, wouldn't it?

A. That would be a method of illustration, yes, sir.

Q. Do you know of any situation where that has happened?

A. What do you mean, "has happened?"

Q. Where there has been a great difference in pressures on two sides of a fault, and as a result of production in one and reduction of pressure on that side, and lack of production and the reduction of pressure on the other side, that the pressures have finally equalized?

A. Well, my experience in studying pressures is rather meager, but as I know it pressure studies were not started with the birth of the oil industry.

Q. Well, do you know, or has your experience been such [fol. 314] as to permit you to have an opinion as to whether or not permeability is increased by flowing gas through a producing formation?

A. I have a personal idea that flowing any kind of a fluid that did not leave a residue at a certain velocity, if it had any abrasive action, of course, would increase the permeability.

Q. The only thing you have had to go on for your gas-oil contact in segment A is this well in segment B. Wouldn't it be better to take the oil-gas contact that was logged in the Samwil No. 1 in the Southwest Quarter of the Southeast Quarter of Section 28 in segment A, wouldn't it be fairer to use that well to determine your gas-oil contact?

A. Why? It was an oil well, wasn't it?

Q. Didn't they determine the location of the gas-oil contact in that well?

A. No.

Q. They did not?

A. No.

By Mr. Williams:

Q. May I ask a question in here to see if I am thinking straight, and maybe the witness is clear? Do I understand your testimony is your opinion is with respect to the gas-oil contact in what has been referred to in segment A, is determined solely by some well in another segment, or did you take into account the Samwil well No. 1 and the other oil wells in there, and also the gas well in that section?

A. The highest oil well in the so-called segment A was below the gas-oil contact, as determined in the No. 7 [fol. 315] Fletcher, and the lowest Medrano gas well was in turn higher than the gas-oil contact of Fletcher No. 7.

Q. Did you take those facts into account in your conclusion as to the location of this gas-oil contact?

A. Yes.

Q. That is, in segment A?

A. Yes, sir.

Mr. Williams: That is all.

By Mr. Adams:

Q. Now, you say that the Samwil well was an oil well. It makes both oil and gas, doesn't it?

A. Practically every well in the Medrano zone makes some gas with its oil.

Q. When you say that every well that produces oil makes some gas, that is only the gas that is in the solution, isn't it, about 300 cubit feet of gas to the barrel of oil, isn't that right?

A. Something like that, yes, sir.

Q. But this well is making about 3,534 cubic feet of gas per barrel of oil?

A. When?

Q. As of February 5, 1947.

A. Do you have the initial completion there on it?

Q. I don't know that we do, Mr. Montgomery.

A. There have been several wells that were initially low gas-oil ratio wells that subsequently had high gas-oil ratio. [fol. 316] Q. What wells do you refer to, Mr. Montgomery, that came in as oil wells and then turned to gas wells in segment A?

A. I have not kept track of all of the production tests that have been made, but I believe the Gulf-Sherritt lease in the Northeast of Section 33, there is probably some high gas-oil ratio on that lease.

Q. Is that segment A?

A. Yes, sir.

Q. Is what you have just said there with respect to Sherritt No. 2 well in the Northeast Quarter of Section 33, segment A?

A. That is my understanding, yes, sir.

Q. And that well was completed at a minus depth of 4150, isn't that right?

A. At the top of the formation. That was the top, but the base of the sand was minus 4339.

Q. At that time if there was any base it would be at the top of the sand?

A. That varies on the kind of withdrawals that have taken place in the producing zone.

Q. How much lower should it be, if it is at the top of the sand, how much lower should it be than the top at that time?

A. That would depend entirely on the permeability streak through the sand and what withdrawals have taken place through those streaks, and any number of factors.

Q. It could not be any higher than the top of the sand? [fol. 317] A. That is correct, yes, sir.

Q. So, even if you say it was at the top of the sand, the top of the sand was found at minus 4150, and if that well, as you say, has largely gone to a gas well, then your gas-oil contact in segment A should be a minus 4150, shouldn't it, instead of a minus 4000?

A. This gas-oil contact was the original gas-oil contact. It so happens that gas and oil joinder is not a knife edge any more after the pool has been produced, but it is a jagged sort of line which would probably inter-finger, due to permeability streaks within the sand itself.

Mr. Williams: Let me interrupt there.

Mr. Adams: This is really time to cross-examine the witness.

Mr. Williams: Go ahead. I was thinking we were proceed-

ing under an erroneous presumption, but go ahead, and we will correct it on redirect examination.

By Mr. Adams:

Q. This jagged edge to which you have referred is pretty well illustrated, that while the oil-gas contact may have been found in the Sherritt No. 2 as minus 4150, it is found in the Samwil No. 1 in the Southeast Quarter of Section 28 at minus 4187. That is what you mean by irregular or jagged edge to the top of the formation?

A. I don't know where you got the 4187 minus.

Mr. Williams: 4177, isn't it?

[fol. 318] Mr. Adams: Maybe it is 4177, or 4167.

A. Well, migration of gas out of the gas cap down dip, as I mentioned before, is attributable entirely to production that has taken place within the Medrano zone, and it will go down an even plane no more than will the water come up out of the water zone on an even plane.

By Mr. Adams:

Q. Well, in that respect, these wells in segment A that came in as oil wells, as they have been produced a portion of the section previously containing oil now contains gas?

A. There is a portion of that oil zone that now has been flushed with gas from the gas cap.

Q. And from that map and from the facts as to the depth to which the gas has now been flushed, as indicated in Sherritt No. 2 well, the portion of the pay section in the Medrano there would appear to have been filled with gas to the extent of about 200 feet, wouldn't it?

A. No, sir.

Q. Well, now, you use the gas oil contact of minus 4000 feet, the Sherritt No. 2 has a minus 4150, and so, you say, has largely gone to gas. That would be 150 feet, wouldn't it, Mr. Montgomery?

A. We are talking about different things, in that what has actually happened is that that gas does not move down on a plane and entirely flush 100 per cent of oil.

[fol. 319] Q. What percent does it flush?

A. An indeterminable amount.

Q. Would you say 1 per cent or 99 per cent?

A. I would not hazard a guess. I don't know.

Q. Suppose, for illustration, that the Sherritt No. 2 was making 50 per cent gas and 50 per cent oil, what percent of displacement of the oil by gas would you say had occurred then in the oil producing zone?

Mr. Williams: I would like to object, because the question is based upon assumptions that have not been present in evidence. There is no proof here as to what the ratios of those wells are.

Chairman Bond: If there has not been any proof made counsel may ask the question on the assumption that he is going—it is on the basis you intend to make the proof later.

Mr. Adams: I will withdraw the question.

Mr. Williams: It is the time element I was thinking about. We can take half an hour forming an assumption that is not well founded, and if it is not well founded it is time wasted.

Mr. Adams: Well, I have asked the witness if he has an opinion as to the displacement of oil by gas in segment A in the oil zone, and he has said that there was displacement, but he has not expressed himself as to what the per cent of displacement has been.

Mr. Williams: I believe the witness said he didn't know.

A. I don't know, and I would not hazard a guess.

[fol. 320] Chairman Bond: You could base your hypothetical question on the record or on something you intend to prove yourself. If you have some hypothetical question to put, and you are going to prove it yourself, you may proceed.

By Mr. Adams:

Q. Now, what you have said with regard to the location of the gas-oil contact in segment A, I mean the method that you followed, is largely true, is it not, Mr. Montgomery, with respect to the method of fixing the location of the gas-oil contact in segment B?

A. The No. 7 Fletcher in the Northwest Quarter of Section 34 was the controlling well.

Q. And that well found the gas-oil contact at minus 3967 feet, did it not?

A. No, sir.

Q. By drill stem test?

A. That was the top of the drill stem test, as I recall it.

Q. They didn't find any gas or oil? Didn't they find both gas and oil in the drill stem test?

A. They took a drill stem test from minus 3965 to minus 3937 that contained only gas. Then another drill stem test from minus 3873 to minus 4013, which has a very high gas-oil ratio, compared to the amount of oil recovered, and from the cores which were recovered from the well, from visual observation the cores at the well we guessed that the oil contact, without benefit of core analysis, was somewhere between minus 4000 and minus 4011.

[fol. 321] Q. Then did you check the core analysis after that?

A. I think—I examined them, yes. I didn't go into great detail in regard to core analysis.

Q. Did they conform or fail to conform to your previous guess or opinion?

A. They confirmed the opinion reached at the well.

Q. Did you have a laboratory test made of the samples?

A. Of the cores, yes. We sent them in to our laboratory in Bartlesville, and they made an analysis of these cores.

Q. You say that reflected in the vicinity of minus 4000 to 4011 feet?

A. Yes, sir.

Q. So the gas-oil contact line in segment B might be 4011 just the same as it might be 4000 feet, as you now show it, is that correct?

A. The determination of the gas-oil contact, after considerable production, has taken place in a pool, is rather difficult, but it was the concensus of the opinion of the geologists sitting on this committee that the gas-oil contact was minus 4000.

Q. Do you have an opinion as to the present depth for your gas-oil contact in segment B?

A. It is probably comparable to those conditions which exist all over the West Cement Medrano pool, in that wells, a number of them that were originally clean oil wells with-

out high gas-oil ratio, have now a high gas-oil ratio, which [fol. 322] shows encroachment of gas out of the gas cap down into the oil zone, which is caused by producting oil from that zone and a differential in pressure between the gas and oil zones.

Q. Do you have any opinion as to where the depth of the gas-oil contact now should be in the segment B?

A. There is no plane of gas-oil contact any more than there is a plane of water-oil contact. If enough information were available an average of the high points and low points could be found, one could show that was the average. But there is no such thing as an oil-gas contact line or oil-water line at this time.

Q. The average at the present time, though, would be substantially lower than minus 4000 feet, would it not?

A. It probably would, yes, sir, somewhat substantially—I wouldn't say whether that would be two feet, 10 feet or 100 feet. I would have no idea.

Q. It could be 200 feet too, couldn't it?

A. I think that would be exorbitant.

Q. Now, referring to segment C, from what did you determine the depth of the gas-oil contact?

A. There it happens No. 5 Henley of the Magnolia in the Southeast Quarter of Section 35 encountered the gas-oil contact, did drill the contact.

Q. Now, has there been some of the oil wells in segment C that became high in their ratio of gas production to the [fol. 323] oil produced?

A. Yes, sir; three or four of them that I know of.

Q. That would indicate, would it not, that the gas, as the oil is produced, comes down out of the gas zone into the oil zone, and is thus produced with the oil?

A. It would, yes, sir.

Q. Now, referring to the Anderson-Prichard, Ramsey-Hays well in the Southeast Quarter of the Southeast Quarter of Section 35, are you familiar with it, or do you need to look at the map?

A. Yes.

Q. That well, from our information, would appear to have been completed, finding the top of the information at minus 3947. Is that right, Mr. Montgomery?

A. That is right.

Q. Now, that well has ceased to be productive of either oil or gas in commercial quantities, and has been plugged, is that right? I mean the Medrano section plugged off.

A. It ceased to be a commercial producer of oil because of the high gas-oil ratio, yes, and was plugged off.

Q. What was the base of the Medrano sand in that well, if you know?

A. Minus 4023.

Q. Accordingly, the oil-gas contact would be below 4023 feet then in segment C; would it not?

[fol. 324] A. There is no particular difference in segment C, as you call it, and the comparison to segments A or L. My answer to that would be just the same as it was, that there is no exact contact of gas oil at this time, but it has been changed variably due to the producing of oil and gas in the pool.

Q. Well, let us refer, then, to the Stephens-Pierson well in the South Half of the Southwest Quarter of the Southeast Quarter of Section 35. That well, from the information we have, reached the top of the Medrano at minus 4066. If that well now has very high oil-gas ratio, wouldn't that be indicative that the oil-gas contact was below the depth of the top of the formation in that well?

A. It would have to be answered the same way as I answered the previous question, in that there has been encroachment—down dip encroachment of gas through that area, but it is not on a plane.

Q. Now, that Pierson well to which I just referred, from the map would appear to be only about 600 feet from the Hays well in the Southeast Quarter of Section 35. That is about right, isn't it?

A. That is approximately right, yes, sir.

Q. The same situation we have just discussed also applies, does it not, to the Magnolia-Henley well in the Southeast Quarter of Section 35? By that I mean the production has gone largely to gas from oil in the Medrano production.

[fol. 325] A. Are you talking about the No. 5 Henley?

Q. Yes, sir; I believe that is correct.

A. Yes; that is true; it has practically gone to gas.

Q. So, all of the wells in the Southeast Quarter of Sec-

tion 35 in which there was initial oil production have largely gone to gas production?

A. That is right.

Q. Do you have an opinion as to the depth of the gas-oil contact as it now exists in segment C in the Medrano sand on the basis of these wells in the Southeast Quarter of Section 35?

A. I do not have.

Q. Well, would you say that it is lower than as reflected on your map, Exhibit 54?

A. The average of the high and low points of gas encroachment would be lower than here, minus 4000.

Q. Generally what we have said, Mr. Montgomery, with respect to the present oil-gas contact being lower than the hypothetical gas-oil contact shown on Exhibit 54 is true with relation to the segments D and E also, isn't that correct?

Mr. Williams: We object to the use of the word "hypothetical."

A. The line as used on the map, minus 4000, is not hypothetical, in that we actually——

By Mr. Adams:

Q. It is a guess, isn't it?

A. No, sir. It is determined by actual well control.

Q. It was not determined by actual well control in each [fol. 326] segment?

A. It is by common reservoir, though.

Q. That is a question, of course, of opinion. It may have been once before these faults occurred. Well, whatever it may have been originally, this Exhibit 54 does not purport to show either the depth of the gas-oil contact or the depth of the oil-water contact as they exist today.

A. They were meant to be the original before the pool was ever disturbed by producing it.

Q. I mean this does not show today's picture, does it?

A. Not that average, but there is oil in a great portion of the pool down to a minus 4741. There is also considerable oil up to minus 4000. There is probably some oil that is even fingered up into the gas and is above the line of 4000. What that average would be, I would not know.

Q. Do you know of any instance where oil is produced above a depth of minus 4000?

A. It so happens that they have a gas-oil ratio rule down there which penalizes you, so it would not be economical.

Q. I say, do you know of any such a situation?

A. So, they are not doing that.

Q. You don't know? The answer is "no", then?

A. My answer is no, but I think it could be done.

Q. Now, it is from these lines, hypothetical or otherwise, whatever they are, that you show on Exhibit 54, that you [fol. 327] reported to the engineers of applicants of the thickness of the oil horizons in the Medrano sand in each of the segments A, B, C, D, E and F, is that correct?

A. That is true.

Q. Now, is that better reflected from another exhibit than it is from Exhibit 54?

A. No; not in my way of thinking. The contours are self explanatory.

Q. Now, did you work out the porosity factors in the oil producing sections in the Medrano sand in each of these segments?

A. We did not.

Q. That was performed, that plan, by the engineers, is that correct?

A. That is right.

Q. When you say, as from your map, that the thickness of the oil section in the Medrano sand in segment A was that which extended below the depth of the minus 4000 feet to the depth of the oil-water contact to a minus 4741 feet, did you mean that all of that thickness was productive of oil?

A. That was the original—that was what was originally in that zone, yes, sir.

Q. And do you mean that was all effective thickness? I mean it did not have any shale in it; it was all oil bearing sand, is that correct?

A. You have misinterpreted the map, then. The oil-gas [fol. 328] contact at a minus 4000 to minus 4741, the porous part of the Medrano sand through that vertical interval contained oil. The sand was not 740 feet thick.

Q. How can you tell from your map how thick it was?

A. Not from that map. That is the reason we made up

the isopachous map, showing the thickness of the sand which travels at 741 feet at an angle.

Q. That is the reason I asked would another exhibit more clearly illustrate——

A. No; you asked if the vertical field here has oil in the structure, as I understand you.

Q. Maybe I didn't make myself clear. Do you have the isopachous map with you to put on the board a minute?

A. Through the oil zone?

Q. Yes. That is Exhibit 57?

A. Yes.

Q. From that, as you furnished it to the engineers, that would infer, would it not, that all of the portion designated as oil bearing sand was an effective reservoir for oil?

A. That is right.

Q. Did you examine the core data in the wells in segment A?

A. Yes, sir.

Q. Did you find any shale sections in the sand?

A. Yes, sir.

Q. Do you know what portions of the sand area was [fol. 329] consumed by shale sections?

A. My memory is not that good, although deductions were made for the total zoning to get the net sand that was used on this map.

Q. And the isopachous map, then, Exhibit 57, purports to show only the effective oil reservoir?

A. That is correct.

Q. Effective thickness.

A. To the best of the committee's ability, yes, sir.

Q. And that same thing is true with respect to the other segments?

A. That is true of the whole Cement West Medrano pool.

Q. I mean from your exhibit.

A. That is right.

Q. Mr. Montgomery, who told you what they wanted shown on these maps or these exhibits?

A. Well, I don't believe it was hardly necessary for them to tell us what was wished, as we knew what was required. In other words, they needed a structural map, they needed

a sand thickness map, they needed that which contained gas and that which contained oil.

Q. But you were not familiar, were you, with each of the segments, I mean you individually, were you? Were you fully familiar with all of the data on each of the segments?

A. I did not stay on every well in the field, nor did I [fol. 330] personally examine every core from every well in the field, but I was familiar with the whole West Cement Medrano pool.

Q. You prepared some sort of a geological report at the instance of your management before there was a geological—so-called geological committee appointed, didn't you, relating to this West Cement Medrano area?

A. I don't know what report you could refer to. Was it my personal report?

Q. Well, one for the company.

A. I have written many letters and small reports on Cement, yes, sir.

Q. I mean, wasn't your first geological report rejected, and then after you talked to the geologists for the other applicants, didn't you formulate a different idea about——

A. I think I know what you have reference to now. In regard to the first correspondence that was sent out, is that what you have reference to?

Q. Yes; sent out pertaining to this proposed unitization.

A. A map remained in Bartlesville, and accompanied this correspondence. It showed that I had nothing to do with that map, didn't see it for some time. I was not consulted whatsoever.

Q. It did not correspond very well with Exhibit 57, did it?

A. It certainly did not, because the man that made the map had not had the first hand experience that this group of geologists had that made up this map. He made two or [fol. 331] three glaring errors in there that correlated purely electric logs, and his idea of the thing as a whole was quite a lot different than he would have had if he had been in close contact with it.

Q. Did the first map prepared in your Bartlesville office show this as five separate sources of supply?

A. Not to my knowledge.

Q. I wonder if you are able to, and if you could produce that map.

Mr. Williams: This witness is testifying, and he said in his opinion it was wrong. You are trying to get this witness' opinion into the record. I don't believe a map drawn by somebody else——

Chairman Bond: You had better get the maker of the map.

Mr. Williams: I would think so.

Mr. Adams: Well, we will ask the Phillips Petroleum Company to produce the map, then.

Mr. Williams: I don't believe it is competent.

Mr. Adams: Well, you are here, aren't you?

By Mr. Adams:

Q. In your previous testimony you said that you prepared, in addition to the maps which you offered in evidence, a geological report which was submitted, either to your management or to the engineers for applicants, and we asked at that time that you produce that report. I wonder, do you have that with you?

A. Yes, sir.

[fol. 332] By Mr. Williams:

Q. Let me ask you a question: Is that the final concensus of your committee, or is that a preliminary report?

A. That is a preliminary report written in October, 1945.

Mr. Williams: I don't believe it would be competent, if the Commission please. Here is a group that had certain preliminary work, and then later on additional work. Is their preliminary work of any confidential value in a hearing of this kind?

Chairman Bond: If there is a diversity of opinion on that situation, and counsel has expert testimony that will substantiate your minority opinion, he probably is entitled to that.

By Mr. Williams:

Q. As I understand, this report is one you joined in yourself?

A. Yes, sir.

Q. But it was the preliminary report written earlier in the study of the pool?

A. That is correct.

Mr. Brown: I don't think, if Your Honor please—now, this would be for the purpose of impeaching this man's testimony, and impeaching the exhibit that he made. You can't bring in an exhibit that somebody else offered by another witness, and impeach this witness by what somebody or some other witness says. I don't think it is proper.

Chairman Bond: That is true, that is not a proper [fol. 332a] method of impeachment, but if the Commission understands correctly, he is not offering to impeach him, but he is offering to show a diversity of opinion; not a question of impeaching, particularly, but to show a diversity of opinion.

Mr. Williams: But, if the Commission please, we have no real objection to it, but it is just encumbering the record with a lot of preliminary work, some of it having confidential value, to counter the later opinion.

Chairman Bond: It would encumber the record, unless counsel has experts that do not agree with your report. On diversity of opinion counsel is entitled to it.

By Mr. Adams:

Q. Referring to the Oaks well, in the Southeast Quarter of Section 34, Phillips-Oaks No. 2, state, if you know, what the top—what was the top of the Medrano sand section in this well?

A. Minus 4243.

Q. What is the base of the Medrano sand section in this well?

A. Minus 4386.

Q. Would you please state the interval in the Medrano sand in this well which is now being produced?

A. I do not have that record, nor do I remember.

Q. Do you know that an effort was made to produce this well in another section prior to its completion in a lower section?

A. As I remember, we tested the conglomerate on top of

[fol. 333] the Medrano sand, if that is what you have reference to.

Q. Do you know what the sub sea depths were on the conglomerate?

A. No, sir; I don't. It was roughly around 50 or 60 feet higher than the top of the sand, and that whole section was occupied by this conglomerate.

Q. Do you know whether a Schlumberger was run on that well?

A. We did.

Q. Do you have that with you?

A. No.

Q. I wonder if you would permit us to see that sometime this evening, or at noon, if we have time.

A. You should have a copy of it, as I made arrangements with Mr. Wanamaker to get you a copy.

By Mr. Williams:

Q. But if he does not have it you will see that they get it?

A. Yes.

Chairman Bond: We will take about a five minute recess.

(After recess the proceedings were resumed as follows:)

Chairman Bond: Gentlemen, you may proceed.

Mr. Adams: I would like to have this marked as an exhibit.

(The instrument referred to was thereupon marked as Exhibit 68 for identification.)

By Mr. Adams:

Q. Mr. Montgomery, I hand you Exhibit 68, and I will ask you to state if that is the report, or a copy of the report [fol. 334] of the geologists' committee to the engineers' and operating committee of the applicants here.

A. It was a report written in October, 1945 by the geological committee; but as to exactly who the copies were sent to, I don't remember.

Mr. Adams: At this time, we would like to offer in evidence Exhibits 65, 66, 67, and 68.

Mr. Weems: If there is no objection, the exhibits will be admitted.

Mr. Williams: No objection.

(Exhibits numbered 65 to 68, both inclusive, are made a part of the record and are set out in proper numerical order in the exhibit binder accompanying and made a part of this record.)

By Mr. Adams:

Q. To summarize the information reflected on the exhibits which the engineering committee prepared, and which have been introduced here, they do not in and of themselves attempt to determine the quantity of oil and gas recoverable from the Medrano sand under each of the wells in each of the sections as of today, isn't that correct?

A. The geological committee never made such an attempt pertaining to the volume of oil or gas at all.

Q. All right. These exhibits, then, are based entirely on supposition, isn't that correct, as of a date some years preceding this time?

[fol. 335] A. No; the maps as made by the geological committee were geological maps based on the facts as of the West Cement pool before any production was taken from it.

Q. You don't mean based on facts, do you?

A. Based on the well control average then existing.

Q. Based on interpretation of the facts?

A. Interpretation is right, yes, sir.

Mr. Bond: If the Commission please, with reference to Exhibit 68, which is the report of the geological committee, it is our understanding that that exhibit is introduced as a part of this witness' cross examination. Is that correct?

Mr. Adams: That is correct.

By Mr. Adams:

Q. Now, based on the light of present day evidence, are there not corrections that should be made with regard to the exhibits which were prepared by your group of geologists, and which have been introduced here?

A. So far as I know the geological conditions to my knowledge the maps are up to date.

Q. I mean your conclusions from facts, though, Mr. Montgomery, as reflected on your exhibits, should not there be corrections now as disclosed by drilling subsequent to the preparation of your maps?

A. Mr. Palmer is drilling a well down there in which information is not available on at this time, and I could not say exactly what influence that well would have on our [fol. 336] maps, but I believe all other well control is taken into consideration on these maps.

Mr. Williams: I wonder if counsel is willing to give the witness the information on the well that is now drilling.

By Mr. Adams:

Q. In making up exhibits 56 and 57, did you include dry acreage which was not proven productive by drilling?

A. That is correct, yes, sir.

Q. And that is a very substantial part of segment A, is that not right?

A. It is a part of it. I wouldn't say how substantial it is.

Q. Do you remember the Stephens-Pell lease in the Southwest Half of the Southwest Quarter of Section 28 in segment A?

A. Yes.

Q. Your maps would indicate that that lease has approximately a million barrels of recoverable oil?

A. Our maps did not purport to show how much recoverable oil was present.

Q. Do you know that a well has now been drilled on that acreage to the Medrano formation?

A. Yes.

Q. And do you know that that well is productive of only 30 barrels of oil per day from the Medrano?

A. It is hardly in line with our work that we keep up currently on the new oil well performance in a field. That [fol. 337] is usually done by the petroleum engineers and the production department.

Q. That well has been drilled since you made up this geological work and the preparation of these maps?

A. Yes. The fact that it did find the Medrano sand at approximately where we indicated they would find it, substantiates our maps.

Q. Substantiates that the Medrano sand was there?
A. That is right, yes, sir.
Q. But did it substantiate the amount of Medrano sand oil bearing that was there?
A. I don't exactly remember how much thickness we had given that local area prior to the drilling of that well.
Q. Could you look at the map and tell?
A. Not this map, no, sir. This is a final map that was prepared after the drilling of the Pell well.
Q. Which map is that, now, Mr. Montgomery?
A. These maps, 54, 55, 56 and 57 exhibits were prepared after the drilling of the Pell well.

By Mr. Williams:

Q. But that well is shown on these maps, is that correct?
A. Yes.

By Mr. Adams:

Q. If the Stephens-Pell well in the West Half of the Southwest Quarter of Section 28 takes 30 barrels of oil per day from the Medrano, and if the engineering committee [fol. 338] of applicants have allocated a million barrels of oil to that lease from the Medrano, and if there was no decline in production from that well during the life of its production, it would take about 100 years to produce that oil out of that lease from that well, wouldn't it?

Mr. Williams: I object to that question, being incompetent, irrelevant and immaterial, improper cross examination, and it is argumentative.
Chairman Bond: It is improper cross examination. He may make him his own witness on that evidence.
Mr. Williams: It is in a different field, from this concerning the maps and the qualifications. He is asking about a different well performance.
Chairman Bond: If you are qualified you can state. If you are not, you can't answer it.
A. What was the question, please?
Mr. Adams: Will you read it, please?

(Last question read by the reporter.)

Mr. Adams: The question also assumes facts not in evidence. I will say for the benefit of the Commission the engineers that make the calculations about which we now talk are going to be on the stand and going to testify to this. We think it is improper to go into it with this witness. This witness will be here throughout the hearing, and if after the proof is had with respect to the oil given the Pell lease, [fol. 339] they believe this witness would discredit that proof, they can then call him as their own witness.

Chairman Bond: If the witness desires, he can state the company has other witnesses who are qualified. If the witness does not disqualify himself as a witness he can answer, if he knows.

A. I have not made a study of the pay out of the different wells in the Cement field, and for that reason I don't feel I am exactly qualified to answer that question.

Mr. Bond: The Commission will recess until 1:30.

(Witness excused.)

(Whereupon, at 12 o'clock noon a recess was taken until 1:30 o'clock p. m. of the same day.)

[fol. 340] Afternoon Session, 1:30 P. M.

Chairman Bond: Gentlemen, you may proceed.

A. J. Montgomery, resumed the stand and testified further as follows:

Cross-examination (resumed).

By Mr. Adams:

Q. Mr. Montgomery, you stated that in the material furnished by the geologists with whom you worked in this area here under consideration submitted to your engineers for your various companies and to your operators' committee, all of the maps which have been offered here in evidence and the written geological reports which have been offered in evidence. Were there any such submitted by the geologists committee which we have not discussed that you recall?

A. Maps other than these submitted as evidence, there were preliminary maps that were furnished different operators and engineers of the companies to do with as they saw fit.

Q. Since this area contains undeveloped acreage, is it not possible that subsequent development might necessitate a change in the geological conclusions which your geological group made and delivered to the engineering and operating members of your organization?

A. That is very true, in that development might even change the conclusions reached on the developed part, as well as the part undeveloped.

Mr. Adams: If the Commission please, we would like to [fol. 341] —I don't know how the reporters can handle it, but we would like to offer the model representing Exhibit 54 into evidence.

Comm'r. Weems: Let this be Exhibit 54?

Mr. Adams: It is a model representation of Exhibit 54.

Comm'r. Weems: It will be accepted and received, and let the reporters figure out how they can do it.

(The model, Exhibit No. 69, is made a part of the record, and will accompany the exhibit binder.)

Mr. Bond: It is understood this exhibit may be made a part of the witness' cross examination?

Mr. Williams: I don't believe this witness testified in his opinion it was an accurate representation.

Mr. Adams: He said it was a fair representation.

The Witness: That is right; on brief scrutiny that would be my opinion.

Mr. Williams: Does this purport to show the correct sand thickness?

Mr. Adams: It is a photostat of the map.

Mr. Williams: The map is of the surface on top of the sand. It does not purport to show sand thickness.

Mr. Adams: Oh, no, this is a model of Exhibit 54.

Mr. Williams: I don't see that we would have any objection to that.

Mr. Adams: I believe that is all.

By Mr. Bond:

Q. Mr. Montgomery, will you refer to your Exhibit 24? [fol. 342] Do you have that on the board?

A. I don't have that exhibit at hand.

Q. Let's see, you have your Exhibit 54 on the blackboard, I believe.

A. That is right.

Q. Will you refer, then, to that exhibit, and advise the Commission of the location of all control points that you used in making the maps indicated as Exhibits 54 to 57, inclusive.

A. The wells that have a circle around them are the control points used in making the south part of the map, as well as——

Q. Now, by the "south part of the map", do you mean the oil thickness map?

A. That is correct, yes, sir.

Q. The area covered by the oil sand?

A. That is right. Those wells further determine the northeast and north boundaries of the outline area which was and has been determined by the Commission previously.

Q. All right. Now, those are the wells outlined in black. What other control points were used?

A. Those are the wells that drilled to the Medrano sand section, and which had direct bearing on the Medrano zone.

Q. Do you mean the wells outlined in black?

A. The wells circled in black.

Q. And you used those wells as control points in making the maps?

[fol. 343] A. That is correct.

Q. Also, in making the map Exhibit 24, which defines the outside boundaries of the pool.

A. The geological committee did not make Exhibit 24.

Q. What other control points were used in making the maps?

A. I don't believe I follow you. If a well was drilled only to 3000 feet it would have no control, so far as the Medrano was concerned.

Q. I am not talking about any points except control points that we used in making the four maps.

A. All wells, that drilled the Medrano were drilled to a depth in a stratographic section involvement of the Medrano zone, were used.

Q. Were there any wells used that did not reach the Medrano section?

A. No.

Q. Will you indicate to the Commission on Exhibit 54 the wells that were used as control points in addition to those outlined in black, or circled in black.

Mr. Williams: Do you mean you want him to point out all of the Medrano wells?

Mr. Bond: All of the control points.

Mr. Williams: He just got through testifying all of the wells drilled in the Medrano were drilled to a stratograph in relation to the Medrano sand for a control point.

[fol. 344] Mr. Bond: If the Commission please, I have asked the witness to indicate to the Commission which wells those are on the map.

The Witness: I made a slight mis-statement there, in that there are additional wells besides the ones that are circled in black, in that those are the ones actually producing from the Medrano. In other words, Amerada No. 1 McClaren in the center of the Northeast, Southeast, Southeast of 6, 5, 9, proved the presence of no Medrano sand at that point.

By Mr. Bond:

Q. And that is one of your control points?

A. That is correct.

Q. Now then, will you go ahead and indicate to the Commission in turn each control point that was used in making these maps. It will be quite a long job, I am sure, but we want to get those matters in evidence.

A. Anderson-Prichard No. 1 "B" Prentice in the Northeast of the Southeast of the Wouthwest, 6, 5, North, 9, West.

Q. Now, will you indicate which well by number, numbering the Amerada-McClaren as No. 1, and numbering the Prentice 1 "B" as 2, and so forth, in numerical order as you designate each control point.

A. We did not so number them.

Q. Will you do that, though, on the exhibit?

Mr. Kaveler: I wonder if the red pencil would not be better.

Mr. Bond: I believe it would.

[fol. 345] By Mr. Bond:

Q. Now then, will you advise the Commission of the name and location of each well as you number it for your control point?

A. No. 3.——

By Mr. Williams:

Q. Which is No. 1?

A. No. 1, Amerada No. 1 McClaren. It is the Northeast of the Southeast of the Southeast of 6, 5 North, 9 West.

No. 2, Anderson-Prichard No. 1-B Prentice, in the Northeast of the Southeast of the Southwest of 6, 5 North, 9 West.

No. 3, Anderson-Prichard No. 4-A Prentice in the Southwest of the Northeast of the Southwest of 6, 5 North, 9 West.

No. 4, Anderson-Prichard No. 1-A Prentice, Northeast, Northeast, Southwest of 6, 5, 9.

Q. Is that No. 1-A Prentice or 3-A Prentice?

A. No. 1-A Prentice.

Q. That has a sand at 4007 feet at the top below sea level?

A. That is correct.

Q. All right.

A. No. 5, Anderson-Prichard No. 3-A Prentice, approximately in the center of the Northwest of the Southwest of 6, 5 North, 9 West.

No. 6, Anderson-Prichard 1-A Davis, in the Southwest, Southwest, Northwest of 6, 5 North, 9 West.

No. 7, Gingrich No. 1, in approximate center——

Q. Is that Ramsey or Peppers?

[fol. 346] A. I believe Peppers is the operator. It is shown as Ramsey on the map, but Peppers is operating it.

Q. That is a gas well, is it, or dry hole?

A. It is a gas well.

Q. The No. 1 Gingrich?

A. The No. 1 Gingrich, yes, approximately in the center of the Northeast of the Northwest of 6, 5 North, 9 West.

No. 8, Anderson-Prichard No. 1 Robinson, in the Northeast, Southeast, Southeast of 1, 5 North, 10 West.

No. 9, Anderson-Prichard No. 1 Pickard, in the Northeast, Northeast, Southeast of 1, 5 North, 10 West.

No. 10, Stephens Petroleum No. 1 Walker, in the Southwest of the Southeast of the Northeast of 1, 5, 10.

No. 11, Potter No. 1 Davis in the Southwest of the Northeast of Northeast of 1, 5 North, 10 West.

No. 12, Anderson-Prichard No. 2-A Walker, in the approximate center of the Southwest, Northeast of 1, 5 North, 10 West.

No. 13, Anderson-Prichard No. 1-A Walker, in the Southwest, Southwest, Northeast of 1, 5 North, 10 West.

No. 14, Magnolia No. 6 L. Edwards, in the Northeast, Southeast, Northwest of 1, 5 North, 10 West.

No. 15, Magnolia No. 7 L. Edwards, located in the Southeast of the Northeast Quarter, just north and west of the No. 6 well.

No. 6, Magnolia No. 5, L. Edwards, in the Southwest, Northeast, Northwest of 1, 5 North, 10 West.

[fol. 347] No. 17, Magnolia No. 4, L. Edwards, in the center of the Northeast, Northwest of 1, 5 North, 10 West.

No. 18, Magnolia No. 2, L. Edwards, in the Southwest of the Northwest of 1, 5 North, 10 West.

No. 19, Amerada No. 1 Edwards, in the Northeast, Southwest, Northwest of 1, 5 North, 10 West.

No. 20, Amerada No. 1 No-ho-co in the Southwest, Southeast, Southeast of 2, 5 North, 10 West.

No. 21, Amerada No. 1 Hartshorne, in the Northeast, Southeast, Northeast of 2, 5 North, 10 West.

No. 22, Amerada No. 2 Hartshorne, in the Northeast, Southwest, Northeast of 2, 5 North, 10 West.

No. 23, Phillips Petroleum Company No. 1 Hartshorne, in the approximate center of the North Half of the Northeast, Northeast, 2, 5 North, 10 West.

No. 24, Phillips Petroleum Company No. 2 Hartshorne, Northeast, Northwest, Northeast, 2, 5 North, 10 West.

No. 25, Phillips Petroleum Company No. 1 Margaret, in the Northeast, Northeast, Northwest of 2, 5 North, 10 West.

No. 26, Amerada No. 1 Little Chief, in the Northeast, Northeast, Northeast of 3, 5 North, 10 West.

No. 27, Magnolia No. 12 Lindsey, in the approximate center of the Southwest Southeast, 36, 6 North, 10 West.

No. 28, Magnolia No. 10 Lindsey, in the Southwest, Northeast, Southeast of 36, 6 North, 10 West.

[fol. 348] No. 29, Magnolia No. 6, Medrano, in the Southeast, Northeast, Southwest of 36, 6 North, 10 West.

No. 30, Magnolia No. 7, Amerada, in the Northwest, Northwest, Southwest of 36, 6 North, 10 West.

No. 31, Magnolia No. 11 Amerada, Southwest, Southwest, Southwest of 36, 6 North, 10 West.

No. 32, Magnolia No. 2 Henley, in the Northeast, Northeast, Southeast of 35, 6 North, 10 West.

No. 33, Magnolia No. 5 Henley, in the Northeast, Southwest, Southeast of 35, 6 North, 10 West.

No. 34, Anderson-Prichard No. 1 Hays, approximately in the center of the South Half of the Southeast, Southeast of 35, 6 North, 10 West.

No. 35, Stephens Petroleum Company No. 1 Pierson, in the approximate East Half of the Southeast, Southwest, Southeast of 35, 6 North, 10 West.

No. 36, Palmer No. 5 Sterba, in the Southeast, Northeast, Southwest of 35, 6 North, 10 West.

No. 37, Palmer No. 4 Sterba, in the Southeast, Southeast, Southwest of 35, 6 North, 10 West.

No. 38, Palmer No. 6 Sterba, in the Northeast, Southwest, Southwest of 35, 6 North, 10 West.

No. 39, Palmer No. 3 Sterba, in the Northwest, Northwest, Southwest of 35, 6 North, 10 West.

No. 40, Phillips Petroleum Company No. 1 Oakes, in the [fol. 349] Northeast, Northeast, Southeast of 34, 6 North, 10 West.

No. 41, Phillips Petroleum Company No. 2 Oakes, in the Northeast, Southeast, Southeast of 34, 6 North, 10 West.

No. 42, Phillips Petroleum Company No. 3 Oakes, in the Northeast, Southwest, Southeast of 34, 6 North, 10 West.

No. 43, Phillips Petroleum Company No. 4 Oakes, in the Southwest, Northwest, Southeast of 34, 6 North, 10 West.

No. 44, Stephens Petroleum Company No. 5 Plummer, in the Northeast, Southeast, Southwest of 34, 6 North, 10 West.

No. 45, Stephens Petroleum Company No. 4 Plummer,

in the Southwest, Northeast, Southwest of 34, 6 North, 10 West.

No. 46, Stephens Petroleum Company No. 3 Plummer, in the approximate center of the Northwest, Southwest of 34, 6 North, 10 West.

No. 47, Amerada No. 1 Beemer, in the Northeast, Northeast, Southeast of 33, 6 North, 10 West.

No. 48, Stephens Petroleum Company No. 1 Pohlemann, in the Northeast, Northeast, Northwest of 33, 6 North, 10 West.

No. 49, Gulf No. 1 Sherritt, in the Southeast of the Northwest, Northeast of 33, 6 North, 10 West.

No. 50, Gulf No. 2 Sherritt, in the Southwest, Northeast, Northeast of 33, 6 North, 10 West.

No. 51, Gulf No. 4 Sherritt, in the Northeast, Southwest, Northeast of 33, 6 North, 10 West.

No. 52, Gulf No. 3 Sherritt, in the Northeast, Southeast, [fol. 350] Northeast of 33, 6 North, 10 West.

No. 53, Phillips Petroleum Company No. 6 Fletcher, in the Southwest, Southwest, Northwest of 34, 6 North, 10 West.

No. 54, Phillips Petroleum Company No. 5 Fletcher, in the approximate center of the East line of the Northwest Northwest, of 34, 6 North, 10 West.

No. 55, Phillips Petroleum Company No. 7 Fletcher, in the Southwest, Southeast, Northwest of 34, 6 North, 10 West.

No. 56, Sunray-Phillips No. 1-A Dixon, in the Northwes., Southwest, Northwest of 35, 6 North, 10 West.

No. 57, Phillips Petroleum Company No. 4 Farwell, in the Northeast, Northeast, Northwest of 35, 6 North, 10 West.

No. 58, Magnolia No. 5 Sames, in the Northwest, Northwest, Northeast of 35, 6 North, 10 West.

No. 59, Magnolia No. 8 Sames, in the Northwest, Northeast, Northeast of 35, 6 North, 10 West.

No. 60, Magnolia No. 4 Sames, in the Southwest, Northeast, Northeast of 35, 6 North, 10 West.

No. 61, Magnolia No. 6 Sames, in the Southeast, Southeast, Northeast of 35, 6 North, 10 West.

No. 62, Magnolia N. 10 Niles, in the Southwest, Southwest, Northwest of 36, 6 North, 10 West.

No. 63, Ohio No. 2 Rowe, in the Southeast, Southwest, Northeast of 36, 6 North, 10 West.

No. 64, Stephens No. 3, Melton, in the Southwest, Southeast, Southeast of 26, 6 North, 10 West.

[fol. 351] By Mr. Williams:

Q. Say that again, Jack.

A. No. 64, Stephens No. 3 Melton, in the Southwest, Southeast, Southeast—No. 4 it is.

Q. Yes; that is right.

A. No. 4.

Q. Melton No. 4 well?

A. Yes.

No. 65, Stephens No. 1 Melton, in the Southwest, Southwest, Southeast of 26, 6 North, 10 West.

No. 66, Phillips No. 5 Garn, I believe it is called in the report, in the Southeast, Southeast, Southwest of 26, 6 North, 10 West.

No. 67, Phillips Petroleum Company No. 3 Garn, in the Northwest, Southwest, Southwest of 26, 6 North, 10 West.

No. 68, Sunray No. 1 Loose, in the Northeast, Southeast, Southeast of 27, 6 North, 10 West.

No. 69, Sunray No. 2 Loose, in the Southwest, Southeast, Southeast of 27, 6 North, 10 West.

No. 70, Sunray No. 3 Loose, in the Southwest, Southwest, Southeast of 27, 6 North, 10 West.

No. 71, Ray Stephens Incorporated, No. 2 Farwell, in the Southeast, Southeast, Southwest of 27, 6 North, 10 West.

No. 72, Sunray-Stephens, Incorporated, No. 3 Willite, in the Northeast, Southwest, Southeast of 28, 6 North, 10 West.

[fol. 352] No. 73, Stephens Petroleum Company, No. 1 Samwil, in the Southwest, Southwest, Southeast of 28, 6 North, 10 West.

No. 74, Gulf No. 1 Pell, in the Northeast, Southeast, Southwest of 28, 6 North, 10 West.

No. 75, Stephens Petroleum Company No. 1 Pell, in the Northeast, Southwest, Southwest of 28, 6 North, 10 West.

No. 76, is shown on the map Stephens Petroleum Company now owns that lease. I believe the well was originally

drilled as I.T.I.O. community, Dome-Bo, center of the Northeast, Southeast of 29, 6 North, 10 West.

I believe that covers it.

By Mr. Bond:

Q. Do you have any way to check, Mr. Montgomery, with your records so that you may advise just definitely that those 75 wells do comprise all of the control points that were used in making these maps?

A. I don't believe any record I have would necessarily reflect that, but I will say I was a party to the establishment of this line in the past, and I know that there were some other controls used to define this line as made by the Corporation Commission sometime ago.

Q. Will you also advise the Commission as to those control points and continue with the enumeration so that we may have all of the control points that were used in making the maps.

A. Let us get straight a minute. You said, "75 wells." I have 76. Have I made a mistake?

[fol. 353] Q. I beg your pardon, 76 is correct.

A. It is a little bit of historical geology and interpretation of structural geology what caused this line to the north and northeast. It was brought out prior to the establishment of that line by the Commission in allocation hearings.

Q. The line was established on facts, was it not?

A. That is right.

Q. Obtained from wells which you call control points, was it not?

A. That is right.

Q. Will you continue with the enumeration and include those control points.

A. For instance, well No. 1 Farwell of Stephens in the Southwest Quarter of 27, we know it crosses a major fault.

Mr. Williams: To keep them in consecutive order, how about the Stephens Petroleum Company Brown No. 1 in 28. Is that a deep well?

A. It was a dry hole and was definitely low, indicating that the fault did exist at this point, which established this line.

Q. But in answer to his question, it was one of the wells?

A. That is right, yes, sir.

Q. What he wants you to do, go along and number those as the other wells.

A. Continue?

By Mr. Bond:

Q. Yes; just continue with the numbers.

[fol. 354] A. The next one will be No. 77—I misunderstood you. I thought what you really meant was points pertaining to strengthening the control in this outline of the pool, rather than why this was established many years ago.

Q. No; I just want to get the control points first, if you please.

A. You want me to continue to number them that way?

Q. If you please, yes.

A. No. 77, Stephens, No. 1 Brown in the Southwest, Southeast, Northwest of 28, 6 North, 10 West.

No. 78, Ray Stephens, Incorporated, No. 1 Farwell, in the Northeast, Southwest of 27, 6 North, 10 West.

No. 79, Ray Stephens, Incorporated, No. 3 Griffin, in the Southwest, Northeast, Southeast of 27, 6 North, 10 West.

No. 80, Ray Stephens, Incorporated, No. 2 Griffin, in the Southeast, Northeast, Southeast of 27, 6 North, 10 West.

No. 81, Ray Stephens, Incorporated, No. 1-A Griffin, in the extreme southwest corner of the Southeast, Northeast of 27, 6 North, 10 West.

No. 82, Stephens No. 2 Amerada, in the Northeast, Southwest, Southeast of 26, 6 North, 10 West.

No. 83, Stephens No. 3 Amerada, in the Northeast, Northwest of the Southeast of 26, 6 North, 10 West.

No. 84, Magnolia No. 4 Cement-Edwards, in the Southwest, Southeast, Southwest of 25, 6 North, 10 West.

[fol. 355] No. 85, Stephens No. 1 Westerfelt, in the Southwest, Southwest, Northwest of 31, 6 North, 9 West.

No. 86, Ohio No. 6 Culp, in the Northwest, Northwest, Northeast of 6, 5 North, 9 West.

I believe that covers it.

Q. Now, Mr. Montgomery, did you use any other data or information other than you obtained from the control points that you have enumerated on the map in compiling the four maps which are in evidence?

A. As I understand your question, then, only facts that were made available to the drilling of those wells were used.

Q. That is all you used?

A. Yes, sir.

Q. You had no other facts available in reaching your conclusions?

A. Not that I can think of no, sir.

Q. Well, take your time, now, and think and advise the Commission about it.

A. No; it was just facts brought on by the drilling of wells in the Cement pool.

Q. And you have enumerated all of the wells that were used?

A. I feel that I have, yes.

Q. Now, how many of those are control points providing you with information obtained from core analyses?

A. I would hesitate to make a statement unless I really [fol. 356] checked the records on that.

Q. Do you have the records available so that you could check them?

A. We will have to borrow them back from Mr. Palmer.

Mr. Williams: I am sorry. I was not listening to your question.

By Mr. Bond:

Q. Are you in position to furnish us—to furnish the Commission with the information as to how many of these wells that were used as control points did you have the core analysis on?

Mr. Williams: That is information you did furnish to the opposition in this matter?

A. Yesterday afternoon, yes, sir. I believe that, so far as making a permanent record of it is concerned, the engineers used those core analyses in much more detail than we did.

By Mr. Bond:

Q. Did you use the core analysis at all in making these maps?

A. We glanced through them all, but no concerted study of them was made, other than to have them to verify our

other opinions. When there was some doubt as to electric logs, samples, or the occasion of some test that we had made on the well, then a double check was made on the core analysis.

Q. You do not pretend to tell the Commission you were right every time in your opinion?

A. No, sir.

[fol. 357] Q. And in those cases the core analyses always controlled, did they not?

A. Those were considered to be mechanically right, yes.

Q. They are more accurate than an electric log, so far as showing which part of the sand contained oil, and also showing the porosity and permeability of the sand?

A. Oh, that is right, yes.

Q. You did use the factors of porosity, permeability and saturation in determining the thickness of the sand, did you not?

A. In only a general way.

Q. What do you mean, "in only a general way"?

A. We had no idea that—or had no set rule a core had to contain anything like 10 per cent porosity, or 20 per cent porosity, or any given figure to indicate to us it was capable of holding oil pore space.

Q. I believe awhile ago in response to counsel's question you testified that this sand thickness map indicated only sand which contained oil.

A. Or gas.

Q. Or gas.

A. Or water.

Q. Or water, yes. Now, your maps indicate figures from which the volume of the oil sand and the volume of the gas sand can be calculated, do they not?

[fol. 358] A. Providing you have any information as to the porosity of that reservoir.

Q. Now, in determining the amount of sand, as disclosed by your map that you made, you eliminated all of the shale breaks, didn't you?

A. That is right, we did.

Q. And you eliminated every sort of formation and anything that might take up space in the earth, except the oil bearing and gas bearing sand, is that right?

A. That is right. That was an attempt that was made to do that.

Q. I will ask you if it would not be the best geological practice in making such a determination, to use the results obtained from core analyses?

A. That was the reason we used them as a check to glance through them to see we were not making a definite mistake.

Q. Then you did use the core analyses and took the figures from the analyses, and those figures are reflected in your maps, that is correct, isn't it?

A. I would not say that the relative figures are reflected in our maps at all.

Q. What do you mean by the "relative figures"?

A. Cores with 3 per cent porosity containing oil, or 20 per cent, we made no attempt to differentiate the part of the sand that carried 3 per cent porosity, or the part that car- [fol. 359] ried 20 per cent porosity. All we arrived at was a gross thickness of the sand that we thought contained oil or gas.

Q. But you did arrive at the point at which the sand contained neither oil nor gas?

A. That is right.

Q. And also arrived at all of the area covered by shale and other substances, other than oil and gas bearing sand, didn't you?

A. You would naturally have to eliminate those when you got the sand that contained the other.

Q. And you did that, didn't you?

A. That is right.

Q. In determining where the oil sand left off and the shale break began, and determining where the oil sand left off and the water sand began, or where the oil bearing sand left off and some tight sand began that did not bear any oil, your most accurate check on that was from your core analysis, if you had one, wasn't it?

A. That is right.

Chairman Bond: Gentlemen, the Commission has a conference, and we will recess for 10 minutes.

(After short recess, the proceedings were resumed as follows:)

Chairman Bond: Gentlemen, you may proceed.

By Mr. Bond:

Q. I will ask you if it is not a fact that the data obtained from a core analysis is the best and most accurate method [fol. 360] known to science to determine where an oil sand begins and where it leaves off and it then becomes a water sand or gas sand?

A. I would not say that was always true, no, sir. From practical application, the testing of the well would be of much aid to that core analysis.

Q. You think that the actual testing of the well would be more accurate as to whether it is producing oil or gas, oil and gas, or water?

A. I would depend on production tests all the time.

Q. That is not what I said. I said to determine the dividing line between an oil sand and a water sand, or an oil sand and a gas sand.

A. I still would answer the same way, that the core analysis is not the final answer.

Q. I didn't ask you if it was the final answer. I asked you if it was not the most accurate method known to science to determine where the gas sand leaves off and the oil sand begins, or where the oil sand leaves off and the water sand begins.

A. That is probably a matter of opinion. For instance, this morning when I was answering Mr. Adams question about the No. 7 Fletcher, we proved our point by taking the drill stem test to verify the looks of the core and the core analysis. There have been numerous wells over the country that I know of that the core analysis indicated an oil satura- [fol. 361] tion that was worth the testing to which the pipe was set on that made not a rainbow of oil.

Q. Isn't it a fact you have such a well in an area included in this proposed unit, the Stephens Dome-Bo No. 1?

A. I don't remember that I have ever seen a core analysis of that well.

Q. But isn't it true that is a well that was completed as a dry hole and would not produce oil, and now you have determined that sand does contain oil which can be produced? Isn't that a fact?

A. That is slightly a mis-statement of the facts. The well was abandoned. The history of that well was that, as they

drilled through this section they cored to the Medrano zone, as we believed the zone to be, and it did show oil in the cores from our visual observation. After the zone was practically penetrated, drill stem tests were taken and they recovered oil, cut mud, and a show of gas with no free salt water in it. After drilling the well quite a ways deeper, the pipe was set and they came back and perforated this zone and in a few hours test it tested, as I remember on the report, 2.8 barrels per hour of water with a show of oil. After letting the well set overnight the oil had not broken in, and after a brief test indicating that it was the same as it was the day before, they set a plug and came on back up the hole to definitely abandon the well.

Q. And the well has never produced a barrel of market-[fol. 362] able oil, has it?

A. Not to my knowledge, it has not.

Q. And it is marked on your map that you prepared, and that has been introduced in evidence in this case, as a dry hole, isn't it?

A. That is right.

Q. Now then, was there a core analysis made on that well?

A. I don't remember that there was.

Q. Now, that is an example of a well that you drilled and the core showed oil, but the well would not produce oil. That is right, isn't it?

A. It did not under the condition under which it was tested at least.

Q. Now, did you ever have a case, though, Mr. Montgomery, where your core showed that the oil sand stopped at a certain point, a definite number of feet below sea level, and that thereafter the water sand began, and that you found that the water sand produced oil? Did you ever have a case like that?

A. I can't remember that I ever have, no.

Q. Did you ever read about one?

A. No; I never.

Q. You never heard of one?

A. Not that I can think of, no, sir.

Q. Then, Mr. Montgomery, isn't it a fact that the core analysis is the most—is the best and most scientific and [fol. 363] accurate method of determining where the water

sand leaves off and the oil begins, that is, when oil and water are in contact in the ground in the pool?

A. Yes; but I can cite you many instances when it was supposed to make water that it did not.

Q. That is not what I asked you.

A. You are talking about oil. I am talking about gas sand in relation to the water sand. No. 1 Oaks, for instance.

Q. Cite me a case, now, where the core analysis showed water, and it produced oil at that depth. I mean showed pure water, not any oil; all water.

A. I can't remember one.

Mr. Williams: Is there any such core involved here?

Mr. Bond: Yes. Yes; there is one here in the report. The core that was taken from the Hartshorne No. 1 well.

By Mr. Bond:

Q. Is that correct, Mr. Witness?

A. We did what?

Q. The core taken from the Hartshorne No. 2 well, wasn't that such a core?

A. It so happened that well was the determining point of where the oil-water contact was. Below that point was water. It did not produce oil from that water zone. It produced it from the oil zone above.

Q. Did you ever hear of a case in which one of them did produce oil where the core showed it was water, a water zone?

[fol. 364] A. We from time to time cored from that well or that pool in the formation itself.

Q. I am talking about that well or any other well, have you ever seen or heard or read about?

A. Of course, any well—there are a lot of wells that have water in the bottom of the producing zone, that if you were to take that literally, the water well would never produce any oil, but the lower part of that section is oil bearing, and why shouldn't it produce oil.

Q. That is not what we are talking about.

A. That is the situation you have reference to.

Q. No; listen, you and I are talking about the thickness of the oil sand. That is what we are discussing. Where the

oil sand leaves off and the water sand begins, that is a definite point, isn't it?

A. Not necessarily.

Q. In the Hartshorne No. 2 well it was, wasn't it?

A. Not a definite point, no, sir.

Q. Wasn't it at exactly 4741 feet below sea level?

A. From the core analysis and visual observation of that core——

Q. It was exactly——

A. It was exactly at minus 4741.

Q. Yes.

A. But it was oil bearing above that point. It also had a [fol. 365] little water in it.

Q. And it was all water bearing below that point, and had no oil in it?

A. That is what we have so tried to show.

Q. And anything that had a little oil in it, no matter whether it had oil or not, you have included in the body of the oil sand on your map, haven't you?

A. We tried to. That map——

Q. Wasn't that your testimony?

A. That map is to be construed, and can be construed as the original oil-water contact before the pool was ever brought in.

Q. Wait a minute. Let us stay with the volume of the sand.

Mr. Williams: Would it help counsel if the witness would go to the blackboard and draw a picture or cross section?

Mr. Bond: No; I want to examine him.

Mr. Williams: I thought we could save several hours time if the picture was up there for you.

Mr. Bond: No; I want to examine him on what he said. I don't want him to draw a picture of it.

Mr. Williams: Would the witness like to draw a picture to illustrate his point?

Mr. Bond: Very well, go ahead.

The Witness: I will go ahead along with you on it.

By Mr. Bond:

Q. You will not say that the core analysis is the most [fol. 366] accurate scientific method you know of to deter-

mine where the oil sand leaves off and the water sand begins, that is your statement?

A. Outside of the practical production test, yes.

Q. Outside of the practical production test, that is the best method known to science?

A. Yes.

Q. Is it ever possible to get an actual production test right on the line between the oil sand and the water sand?

A. Sure.

Q. Don't you almost always make your test a good way above the water sand so you won't get it into your well?

A. Not necessarily.

Q. I said, "Don't you almost always do that?"

A. It is according to whether you are actually trying to determine where the water level is in a new field, for instance. All of your core analysis, drill stem tests and information indicate that the water ought to be at some given point. You probably set pipe and cement it and perforate.

Q. Are you going to set the pipe through the sand or on the top?

A. Set it through the crude oil coming up to [illegible]ble check that employed by your core analysis, visual observation, cores, samples and drill stem tests, or any other example you might have to indicate you are in water.

[fol. 367] Q. You begin perforating at what point with reference to the top of the water?

A. You would probably perforate slightly below the first top.

Q. Slightly below the top of the water so as to get the water?

A. That is right.

Q. In those checks there is always an opportunity for error in measurements, is there not?

A. Oh, there is opportunity for innumerable things.

Q. But when you get a core up in the laboratory there is no chance of any error about what part of the core contains water and what contains oil, is there?

A. Yes, sir.

Q. Do you mean in the laboratory? You mean those fellows can't tell the difference between water and oil?

A. They can tell that there may be some oil in the core,

but they can't always tell it won't make more water and no oil.

Q. I am talking about if they can tell what is in the sand they have before them; can't they definitely?

A. They can tell what the production of it would be. But what you are primarily interested in——

Q. Do you know whether they can tell what is in that lump of sand they have in the laboratory, whether it is oil or water?

A. Anybody knows that, to be sure.

Q. When you pull this core out of the hole there is an [fol. 368] opportunity for error as to the depth at which it is pulled, isn't there?

A. Oh, sure.

Q. Always that opportunity?

A. That is correct.

Q. So you have an opportunity for error in all cases where you test a well, whether you pull the core and test the core, or whether you set pipe and shoot through into the sand, that is right, isn't it?

A. There is opportunity for error as long as the human element enters into it, the same as testing or analyzing core, the human element enters into it.

Q. With the exception, though, of shooting the casing and testing the sand, do you tell this Commission that the core analysis is the most accurate method of determining where the oil sand leaves off and the water sand begins, that is, determining that point in the strata?

A. It is one of the more primary or best methods that we consider accurate, yes.

Q. Is there any other better, now, with the exception of the actual testing of the well?

A. Not that I know of.

Q. How does that method of core analysis compare with an electric log, as to accuracy in determining where the oil sand leaves off and the water sand begins.

[fol. 369] A. There are a lot of electric logs that can hardly be used for that.

Q. I see.

A. There is also some areas where it is quite natural. It depends on the type of formation from the information you have from visual drilling wells and previous electric

log runs. Taken as a whole, probably the core analysis, as to whether it is 100 per cent water or contains some oil, that core analysis on the whole would be better than electric log.

Q. Now, then, you did use, in compiling these maps, the result of the core analyses made from cores taken from these various wells, did you not?

A. That is right.

Q. Now, will you tell the Commission which wells furnished you with core analyses?

A. Do you want me to tell them from memory, or do you want me to try to check the records?

Q. I wish you would get me an accurate statement on it.

A. Could I contact the engineers here, because they are the ones that actually went into it and probably have a record of it, because I do not have.

Q. Yes; if the Commission would permit, I wish you would do that. How long will it take you to get it?

Comm'r. Bond: You intend to carry your question on on that point?

[fol. 370] Mr. Bond: Yes.

Mr. Williams: May we be off the record?

Chairman Bond: Yes.

(Discussion outside the record.)

By Mr. Bond:

Q. Now, do you have the records?

A. I have before me a tabulation of wells cored in the West Cement Medrano pool, as made up by the engineers, which I consider accurate.

Q. Is that your recordings of cores that you and your committee used in preparing these maps?

A. It is my recollection they used those. We did not keep a tabulation of the core analyses as to where they were cored, or any detailed information of that kind. We used them only in conjunction with our other information.

Q. Will you indicate then, Mr. Montgomery, to the Commission by drawing a circle around the number of wells

as you have numbered them on the map, indicating which of those wells you had core analyses on?

A. I am a little bit at a loss until I talk to one of the engineers as to exactly—these are tabulations of wells cored, but it does not necessarily say that they had core analyses made of them.

Q. I only want you to advise us which wells you had core analyses on.

A. What color pencil do you want me to use this time? [fol. 371] Q. The same color, if you draw a circle around the number.

Mr. Williams: By "core analysis" do you mean cores examined in the laboratory?

Mr. Bond: Yes.

Mr. Williams: As distinguished from cores that were merely examined by the geologists.

Mr. Bond: I would like to have both, and test them. I would like to have the Commission get what these men did, and what information they had in making these maps.

Mr. Williams: In other words, Jack, tell the gentlemen what you did.

By Mr. Bond:

Q. That is what we are getting at.

A. The ones on which I have copies of the core analyses are Phillips No. 1 Hartshorne.

Q. That is No. 24, as previously designated?

A. Northeast, Northwest, Northeast of 2, 5 North, 10 West.

By Mr. Williams:

Q. That was No. 2 Hartshorne?

A. Yes, sir. Phillips No. 1 Margaret, which was No. 25, in the Northeast, Northeast, Northwest of 2, 5 North, 10 West.

Phillips No. 4 Oaks, No. 43, in the Southeast, Northwest, Southeast of 34, 6 North, 10 West.

Amerada No. 1 Hartshorne, which was No. 21, in the Northeast, Southeast, Northeast of 2, 5 North, 10 West.

Amerada No. 1 Beemer, No. 47, Northeast, Northeast, Southeast, of 33, 6 North, 10 West.

[fol. 372] Phillips Petroleum Company No. 1 Hartshorne, No. 23, in the Northeast, Northeast of 2, 5 North, 10 West.

Phillips No. 3 Oaks, No. 42, in the Northeast, Southwest, Southeast of 34, 6 North, 10 West.

Phillips Petroleum Company No. 2 Oaks, No. 41, in the Northeast, Southeast, Southeast of 34, 6 North, 10 West.

Phillips Petroleum Company No. 7 Fletcher, No. 55, in the Southwest, Southeast, Northwest of 34, 6 North, 10 West.

Phillips Petroleum Company No. 6 Fletcher, No. 53, in the Southwest, Southwest, Northwest of 34, 6 North, 10 West.

Amerada No. 2 Hartshorne, No. 22, in the Northeast, Southwest, Northeast of 2, 5 North, 10 West.

Amerada No. 1 Edwards, No. 19, in the Northeast, Southwest, Northwest of 1, 5 North, 10 West.

Sunray No. 3 Loose, which was originally drilled as Darby No. 3 Loose, No. 70, in the Southwest, Southwest, Southeast of 27, 6 North, 10 West.

Anderson-Prichard No. 1 Pickard, No. 9, in the Northeast, Northeast, Southeast of 1, 5 North, 10 West.

Magnolia No. 5 Henley, No. 33, in the Northeast, Southwest, Southeast of 35, 6 North, 10 West.

Magnolia No. 10 Niles, No. 62, Southwest, Southwest, Northwest of 36, 6 North, 10 West.

Gulf No. 1 Pell, No. 74, in the Northeast, Southeast, Southwest of 28, 6 North, 10 West.

[fol. 373] Gulf No. 2 Sherritt, No. 50, in the Southwest, Northeast, Northeast of 33, 6 North, 10 West.

Gulf No. 4 Sherritt, No. 51, in the Northeast, Southwest, Northeast of 33, 6 North, 10 West.

Gulf No. 3 Sherritt, No. 52, in the Northeast, Southeast, Northeast of 33, 6 North, 10 West.

Gulf No. 1 Sherritt, No. 49, in the Southeast, Northwest, Northeast of 33, 6 North, 10 West.

Phillips No. 1 Oaks, No. 40, in the Northeast, Northeast, Southeast of 34, 6 North, 10 West.

Stephens Petroleum Company No. 1 Pierson, No. 35, in the Southeast, Southeast of 35, 6 North, 10 West.

We have a record of the wells cored, which is not represented in these analyses shown. Magnolia No. 6 Medrano, No. 29——

By Mr. Bond:

Q. Will you indicate that by a square?

A. By putting a couple of lines, one on top of the number and one below it?

Q. That would be fine. Draw a line, one above and one below the number of the wells you have cores without analyses.

A. That is right.

By Mr. Williams:

Q. What well is that?

A. Magnolia-Medrano No. 6 well, No. 29, Southeast, Northeast, Southwest of 36, 6 North, 10 West.

Magnolia No. 7 Medrano, which is No. 30, in the Northwest, Northwest, Southwest of 36, 6 North, 10 West.

[fol. 374] By Mr. Bond:

Q. Now, Mr. Montgomery, do those constitute all of the wells on which you have core analyses reports and a core?

A. I believe that is the one that takes care of all of the core analyses, although there have been other cores taken in the field on which analyses were not made.

Q. Well, you indicated that some wells on which you had taken cores and had the cores available for your examination, or that is the reports of the cores for your visual examination, but did not have the core analyses, and those are the ones you marked with a line above and a line below, is that correct?

A. No; those are the ones that are shown tabulated on that sheet on which there was no core analysis with the sheet.

Q. But you had a core analysis?

A. Apparently there never has been or the engineers would have tabulated it.

Q. But you don't have the analysis?

A. It was not in the stack, no.

Q. Now, can you furnish us with the numbers of the wells, indicating the wells on the map, from which cores were taken and which cores were examined by you, or the data from an examination was used by you in the compilation of the maps.

A. It would be purely memory on my part, but there were several cores that the other members of the committee had personal knowledge of, first hand experience, that gave us the benefit of their examination of them visually.

[fol. 375] Q. Was there any record made of those visual examinations of the cores or examination of the cores?

A. No; the map is the best record of that.

Q. That is the first and only record that was made?

A. That is right.

Q. Now, can you indicate to the Commission what wells the committee depended on their memory to determine the character of the core?

A. In most cases memory alone was not used.

Q. What was used?

A. In practically all cases on our sample logs, or our—in the scout book is a permanent record kept, which practically all of the companies filed that watched that area.

Q. Now, we are talking about cores.

A. That is right.

Q. I was not talking about samples.

A. I was talking about the same thing; cores.

By Mr. Williams:

Q. Those records were all made available to your committee at the time of your study?

A. Oh, yes.

By Mr. Bond:

Q. Now, didn't I understand you to say that you used sample records in refreshing your recollection as to what the core showed? Was that what you said?

A. No.

[fol. 376] Q. Well, can you advise the Commission the number of the wells, as shown on your map up there, from which cores were taken and that you and your committee prepared your data from memory of the core? Do you understand that question?

A. Not exactly, no.

Q. Didn't you testify that you and your committee used your memory as to the looks and condition of certain cores taken from these wells; and you had no record of it?

A. Oh, we did have a record of them.

Q. What?

A. I stated we did have a record.

Q. You do have a record of them?

A. As I mentioned, our sample logs and record is kept of cores.

Q. I see.

A. Also in our scout book, or in our scout tickets there is a scout ticket here from the geologists and those are in turn put out by the operating companies, a geological description of those cores made and turned over to the other companies. This committee that made up this map represented practically all of the operating companies at the west dome of Cement. Every geologist that was on this committee had personally seen practically every core that was described in the scout tickets, and consequently had first hand information. He was not taking somebody else's word for that description.

Q. Pardon me, if I interrupt you but will you indicate [fol. 377] now to the Commission the wells from which cores were used in making these maps and which you had core analyses of.

Mr. Williams: That is what the witness said he would have to do from memory at this time, I believe.

A. That is right.

By Mr. Bond:

Q. You do not have those records available?

A. I would probably have to not only check my own records, but every member of that committee would have to check his records which he brought to the meetings with these, because there might be some I do not have that some of the other boys would have.

Q. What information did you glean from these cores in making the maps?

A. The customary information you would gain from looking at any core.

Q. What is the customary information you gained from looking at any core?

A. The character of the formation cored.

Q. Is that the only information that you used in making these maps?

A. The formation cored is examined as to what it may contain.

Q. Anything else used in making these maps from the examination of the cores?

A. Practically all of these geologists that were on this committee have had varied experience over a period of years doing that kind of work. They not only drew on [fol. 378] what that core looked like, but they formed their personal opinion from numbers of years experience looking at cores. They not only drew on what that core looked like, if it was the first one they had ever seen, but they had seen hundreds of them before that helped form their opinion.

Q. I understand your committee was composed of geologists?

A. That is correct.

Q. We began with cores for professional geologists. I want you to tell the Commission what information a professional geologist gleans when he looks at a core, and if there is any in addition to that which you have already given the Commission.

A. A small text book could be written on what you could determine from a core.

Q. Do you know what you determined from these cores, and put in these maps?

A. What we were looking for, if it was not shale, it consequently was not Medrano sand. If it was sand, and had visual porosity in it, it was considered net sand. Then as to whether it might contain oil, that opinion was made. Whether it contained gas or water. If it was, let us say, conglomerate within the total Medrano zone and had no visual porosity, it was considered too tight to produce, and was, therefore, thrown out of the zone to reach a net figure.

Q. In other words, you used the cores to determine the volume of oil and gas sand, or the thickness, we will say, of [fol. 379] the oil and gas sand in this pool?

A. That is correct. We used the thickness of the net sand in the pool.

Q. You then estimated that thickness to the next point where you had actual contact, is that correct?

A. It was contoured, yes.

Q. I understand it was contoured, but you had to estimate the thickness of the sand from one contact point to another, didn't you?

A. That is true in all contouring.

Q. And your next points were the wells themselves, were they not?

A. That is right.

Q. Are you able to give the Commission the amount of core that was recovered in each of these wells that you considered?

A. Pardon me, but ask that question again.

Q. Well, when you considered the core that is taken out of an oil well you consider the amount of core that is recovered, do you not?

A. Yes.

Q. As and from the point down in the ground where it comes from, isn't that right?

A. Sure.

Q. Can you tell the Commission what percentage of these cores you had before you, what percentage of core was [fol. 380] recovered from different wells?

A. No tabulation was made along those lines at all.

Q. Then how could you determine the thickness of the sand if you did not know the amount of core that was recovered, and from what part of the sand it was recovered?

A. That is the purpose of running electric logs, catching samples and keeping drilling time.

Q. In other words, you examined the cores, used the information you gleaned from that examination in connection with the information you gleaned from your electric logs, is that correct?

A. We used all of the information in conjunction with each other.

Q. I understand. Then in determining how much oil sand you would have in any particular well, you might look at the core and you could say, "Now, there is an oil sand," and then you would look at the electric log and you would say, "This log discloses that there are so many feet of sand." Is that the way you proceeded?

A. Checked all samples.

Q. Checked all samples, and that is the regular and ordinary method of proceeding in those matters, is it not?

A. That is correct.

Q. Now then, in determining the top of the sand, I will ask you which is the most accurate—the top of the oil sand, data obtained from core analysis of a complete core, or data [fol. 381] obtained from an electric log used in conjunction with the examination of a part of a core?

A. If your formation were cored from above the sand into the sand and 100 per cent recovery was obtained from that core, I would take the core analysis and a visual looking at that core.

Mr. Williams: May it please the Commission, I have been waiting for a non-productive shale zone to ask for a recess for the benefit of the reporters.

Chairman Bond: We will take a short recess.

(After short recess, the proceedings were resumed as follows:)

By Mr. Bond:

Q. Mr. Montgomery, I call your attention to the Anderson-Prichard Pickard well No. 1, which you have marked No. 9 on the map, and I will ask you to state what the core analysis shows with reference to the amount of core recovered in that well.

A. As to the amount of core from which analysis was made?

Q. The amount of core recovered. That would be of which analysis was made, yes.

A. Apparently a core was taken from 5752 to 5756, 74 samples were used.

Q. What do you mean by "74 samples were used"? Did you say "of which" or "in which"?

A. Of which.

Q. From what sections were the samples used?

[fol. 382] A. The Medrano sand.

Q. From what average depth to what average depth?

A. From 5752 to 5753; from 5757 to 5758, and from 5763 to the bottom of the core at 5766.

Q. How many feet was used at 5763?

A. Only one sample. It was a matter of inches, rather than feet. It is common practice in coring a well like this, in which commercial analysis laboratories are used, that the geologist on the well will take representative parts of the core and send in to be analyzed, rather than canning, or putting it in an air tight container, or some container to prevent evaporation of the fluid.

Q. May I interrupt you just a minute? It is apparent from your records that a complete core was not analyzed in those instances?

A. I was explaining why this was taken, in that these were representative parts of the core that was sent in to the laboratory.

Q. Have you completed your explanation?

A. I believe so.

Q. What analysis was made of the first section from 5752 to 5753?

A. They gave a record of the permeability, porosity, water saturation of the pore space.

Q. What was the permeability?

[fol. 383] A. 530 Millidarcys.

Q. What was the porosity?

A. 16.8 per cent.

Q. 16.8 per cent?

A. Yes.

Q. How about the water?

A. Water saturation of the pore space was 37.03.

Q. Is that connate water?

A. Not necessarily.

Q. What was it?

A. It was water found in the pore space. This report does not record the salt content of that water that was found in the pore space.

Q. What part of that information did you use in making your map?

A. That 16.8 was of prime importance to us.

Q. That was the porosity?

A. That is right.

Q. In what way did you use the porosity?

A. Just to verify our other known facts that it was porous sand and contained oil.

Q. And you verified that the sand from 5752 to 5753 contained oil?

A. It had the porosity, and it did contain oil, yes. At the time of the examination of these core analyses, we already [fol. 384] knew whether the well was making oil or not.

Q. Did your report there show the oil saturation?

A. Yes.

Q. Did you use that in making your determination?

A. We paid practically no attention to that at all.

Q. Now, that gave you the information that the strata for one foot there was an oil bearing strata, is that right?

A. That is right.

Q. What was the thickness of the oil sand that you arrived at in that well?

A. As I remember, they drilled a total of 24 feet of sand in the well. They left a portion of it undrilled.

Q. Will you look at your map and give us the exact number of feet?

A. 24 feet is what they drilled, I am sure. 24 feet is what they drilled, yes.

Q. What kind of sand was that? Was that oil sand?

A. That is right.

Q. And your map, the isopachous map, shows that the thickness of the oil sand at that point is 24 feet?

A. Plus.

Q. 24 feet?

A. 24 feet, plus.

Q. Now, what other information did you use to arrive at the figure of 24 feet, besides the core analysis?

[fol. 385] A. From samples and drilling time.

Q. All right, now your core analysis did not disclose the thickness of the sand in itself, did it?

A. No.

Q. Because you did not in the first place have an analysis of the complete core?

A. We had an analysis of the core from 5752 to 5756, which was sand, but they did not core all of the sand drilled.

Q. You say your core analysis then did not disclose whether or not there were any shale breaks, or the character of the sand from top to bottom? It merely disclosed the sand from 5752 to 5766, is that correct?

A. That is correct, so far as the core analysis was concerned.

Q. Then you had to depend on your electric log and your samples to determine the thickness of the sand to be 24 feet, that is correct, is it not?

A. That is right.

Q. Now, are there any wells disclosed on your map in which you had a complete core analysis?

A. To my knowledge there was not a well cored in the Cement pool that recovered 100 per cent.

Q. Were there any cored that were practically 100 per cent that you would consider sufficient to say that you had the entire core for practical purposes?

A. For practical purposes, yes, there were a number of [fol. 386] wells cored through what would be considered nearly the entire sand section.

Q. But the well you have marked on the map as No. 9 was not one of those wells?

A. It was not.

Q. Now then, I call your attention to the well that you have marked No. 19, which is the Amerada-Edwards No. 1, and I will ask you to state to the Commission if you have a core analysis of that well.

A. Incidentally, in my—I might get away from that question, but incidentally I missed three or four other wells that we had some core analyses.

Q. Would you add that information on the map, please, Mr. Montgomery?

A. Magnolia No. 6 Medrano, No. 29, which is in the Southeast of the Northeast of the Southwest of 29, 6 North, 10 West, the core analysis record has been found.

Magnolia No. 7, Medrano, which is No. 30, in the Northwest of the Southwest of 36, 6 North, 10 West. It has also been found.

Another one which I neglected to mention is Anderson-Prichard No. 1-A Walker, which is No. 13, and it is in the Southwest of the Southwest of the Northeast of 1, 5 North, 10 West.

I have the record of the No. 1 Edwards of the Amerada which you mentioned.

Q. How much of the core was analyzed in that analysis? [fol. 387] A. This is a letter by the Core Analysis Incorpo-

rated, located at Dallas, Texas, in which they write to the Amerada for the results of analysis of the Medrano sand cored in the above well between the depths of 5805 and 5910 are given in type report. "Permeability of the sand core in the above mentioned interval is oil productive. Sufficient productive capacity, favorable connate water content and favorable indicated reservoir. Riskworthy for successful completion."

Q. Does that analysis give the porosity?

A. Yes.

Q. Does it give the permeability?

A. Yes.

Q. And it gives the oil saturation?

A. Yes.

Q. What is the permeability?

A. It is variable, running from zero to as high as 1640 Millidarcys.

Q. A Millidarcys is a unit of resistance, is it not, of oil flowing through the sand?

A. It is a measurement of the ability of that formation to conduct the fluid under certain conditions.

Q. The higher the millidarcys the greater the permeability, so to speak?

A. That is correct.

Q. That is, the easier the oil runs through the sand, and [fol. 388] less resistance to the oil traveling through the sand?

A. That is right.

Q. What portion of the sand carries a permeability as zero?

A. A minor portion.

Q. From what footage to what footage?

A. It is indicated on their reports from a depth of 5805.5 to 5808.5 the permeability is zero. From 5816.5.

Q. Did you say from 5816?

A. Pardon me, 15.5 is the last one above in which permeability was measured that had any permeability. They were taking these plugs, or these tests at roughly one foot apart in the sand, the sand recovered in the core. Now, the test made at 5815.5 had a permeability of 31 millidarcys, while the 5816.5 had zero permeability, also the one at 5817.5

has zero permeability. The one at 5818.2 feet had zero permeability.

Q. At which point?

A. .2.

Q. What depth?

A. 5818.2. These are all subsurface depths.

Q. Those are depths——

A. The dome was probably from the driving power on top of the rotary table.

The next zone for a zero permeability was samples taken from the core at 5845.5, zero permeability; 5846.5 feet, zero permeability; 5847.5, zero permeability; 5848.5, zero per- [fol. 389] meability. And 5849.5, zero permeability. The next one was at 5883.5, which had zero permeability. Another sample was taken at 5886.5 feet, which had zero permeability. Another one taken at 5887.5 had zero permeability. Another one at 5888.5 had zero permeability, and then all samples taken from 5900.5 to 5907.5 feet, inclusive, had zero permeability.

Q. Are there any other zero permeabilities?

A. That is all.

Q. Anything that had zero permeability you did not include in your sand thickness, is that correct?

A. That is right.

Q. Anything that had as much as one millidarcys you did include?

A. We would include it probably, yes, sir.

Q. Well, you did, didn't you?

A. We did.

Q. Now then, what was the total thickness of the sand at that point, that is, the well that you have marked No. 19, as reflected on your isopachous map?

A. 105 feet.

Q. Now, will you tell the Commission how you arrived at that figure of 105 feet from the information that you had at hand?

A. From a study of the electric log samples, drilling time and cores.

Q. And your core analyses, which would include the cores, [fol. 390] that is what you used. Now, tell the Commission how you had that information to arrive at that sand thick-

ness? What did you do with it to get that answer? Just work it out for the Commission.

A. All of the members of the committee had—I believe all of them practically had sample logs in which their company had examined the sample logs. Representatives of the companies with all those sample logs were made available and attended each meeting. The electric log was placed on the table, the sample logs that were there were looked at, the core analysis, or any core record, irrespective of whether it had been analyzed or not, was considered, and the exact point, which should have been more mechanically perfect as to both, was considered back and forth as determined by the electric log, in which the tops and bottoms were used in making these maps as to the structural contours, but the joint consideration of the aforementioned things were the ones that we used in arriving at the net sand thickness.

Q. Can you give the Commission the mathematics of how you reached the figure of 105 feet thickness?

A. The mathematics are relatively simple.

Q. Give us the mathematics.

A. In other words, the definition of the Medrano sand——

Q. No; what did you do?

A. I started to tell you; please wait a minute.

[fol. 391] Q. All right; go ahead.

A. The Medrano zone was considered from any conglomerate. We started at the top of the Medrano zone and went into the conglomerate in the base of the Medrano zone. That total thickness was used, and then all barren zones or streaks, as determined by the things I have mentioned, were subtracted from that.

Q. What was that total thickness? Do you have the thickness there?

A. We worked out a bunch of notes, and when we arrived at that final figure, that was the one we used We had a compilation sheet, yes.

Q. You mean you don't have that record in front of you now, or anything that would disclose to you the total thickness of the sand under that well?

A. Oh, yes, we have one. I think we have it back here.

Q. Does the core analysis disclose the total thickness of the sand under the well?

A. No.

Q. It does not. What was the total thickness of the sand, and at what footage did it begin, and at what footage did it extend to?

A. You are talking about the Edwards, now?

Q. Yes; we are talking about the well you have marked No. 19 on this map, Amerada-Edwards No. 1.

A. The compilation sheet as was used started out with [fol. 392] the company name, the well number and location on that lease of that particular well, and the elevation.

Q. The only thing I want you to tell the Commission, or what I want you to tell them right now is, is the thickness of the sand as disclosed by your records where it began and at what depth it extended, the footage?

A. It extended from minus 4312 to minus 4417.

Q. Was that the full extent of the sand from the time the bit first struck it until it went out of it into the water?

A. I don't believe that well went into water.

Q. Well, where did you stop, the sand at the water level or above it where the bit stopped? That is on your records that you are reading from?

A. We stopped it at minus 4417.

Q. Yes. Was that at the water level or above, where the bit stopped?

A. That is at the base of the sand.

Q. Is that at the water level?

A. No.

Q. Is that below the water level?

A. No.

Q. Where is it with reference to the water level?

A. It was stopped at the base of the sand. At that point we computed the base of the sand as being 224 feet above the water level.

[fol. 393] Q. 224 feet above the water level. What did that 224 feet consist of, what sort of formation?

A. Well, it would be predominately shale. There should be some conglomerate immediately below the sand.

Q. You are saying what it should be. Let me ask you this: Do you know what it was in the well drilled that deep?

A. I don't have the total depth of the well here to know just exactly what it penetrated.

Mr. Williams: Are you talking about down vertical, or are you talking about down top of the structure?

By Mr. Bond:

Q. Can you tell the Commission how you know the depth of the sand at that point, if the well did not go clear through it?

A. Well, the well did go through it, didn't it?

Q. That is what I am asking you.

A. That is my understanding, that the well went through it.

Q. The well went through the sand, and what was the total depth of the well?

A. We don't have a record right here how deep the well was actually drilled. We have it at hand, though, to know where the base of the sand was.

Q. The well went through the base of the sand?

A. That is right.

Q. Now then, the well first encountered the sand at 4417, is that correct?

[fol. 394] A. No——

Q. I mean 4312, I beg your pardon.

A. Yes.

Q. And went out of the sand at 4417, is that correct?

A. Yes.

Q. Now then, the total thickness, then, of the section was 102 feet, is that correct, or 105?

A. 105 feet, yes.

Q. 105 feet. How much of that section was shale and sand with a zero permeability?

A. It is reflected on this tabulation form here that there was no shale present.

Q. Was there any sand with the zero permeability present?

A. There was, according to the core analysis, as I mentioned before.

Q. Did your committee allow for that?

A. It is not so tabulated, if they did.

Q. All right; now, let us look at your core analysis on the well which you have marked No. 21, and which is the Hart-

shorne No. 1—no, let us see, it is Hartshorne—the number is rubbed off of my map. No. 4, I guess. It is the one you have numbered 21.

A. Amerada No. 1 Hartshorne, it is.

Q. No. 4, I believe?

A. No. 1 Hartshorne.

[fol. 395] Q. Is it? All right.

Mr. Williams: It is so near the time of adjournment, I wonder if we could save time if this witness over this evening worked this entire problem for counsel.

Chairman Bond: Yes; it would, and give the information in the morning just what they did, and give them that footage.

The Commission will recess until 10:00 o'clock in the morning.

(Witness excused.)

(Whereupon, at 4:25 o'clock p. m., February 26, 1947, the hearing was recessed until February 27, 1947, at 10 o'clock a. m.)

[fol. 396] TRANSCRIPT OF HEARING—February 27, 1947

(Pursuant to recess on February 26, 1947, the hearing was resumed at 10 o'clock a. m., February 27, 1947, parties present and presiding as heretofore, and the following further proceedings were had:)

Chairman Bond: Gentlemen, are you ready to proceed?

Mr. Williams: Ready, sir.

Chairman Bond: You may take the witness stand, Mr. Montgomery.

A. J. MONTGOMERY, recalled, testified further as follows:

Cross-examination (resumed).

Mr. Bond: If the Commission please, would the reporter read the last question?

(Last question on February 26 was read by the reporter.)

By Mr. Bond:

Q. Will you look at your core analysis on the well you have marked No. 21 on Exhibit 54, which is the Amerada-Hartshorne well No. 1.

A. Before I answer that question I would like to correct a mistake I inadvertently made yesterday. Toward the end [fol. 397] of the hearing I made the statement that we had thrown out core analysis, or excluded from the net sand that which showed core analysis as zero permeability. That was not the case. We did not throw it out.

Q. You mean you did not deduct that footage from the body of sand as shown on your map?

A. That is correct, we did not.

Q. And the thickness of the oil bearing sand, as shown on your map, as to the well marked No. 19, which is the Amerada-Edwards No. 1, is 105 feet?

A. That is correct, yes, sir.

Q. And that 105 feet is computed from the top of the oil bearing formation to the bottom of the oil bearing formation?

A. That is right, yes, sir.

Q. As shown on the electric log, that is what the exact measurements were used from?

A. Yes.

Q. On the electric log?

A. Yes.

Q. Now then, the core analysis, however, showed about 13 feet of sand, on which the permeability was zero millidarcys, and it is also noted on the core analysis it was low permeability?

A. Yes.

Q. Well, it was zero, wasn't it?

A. They made a notation of zero. I believe it is true on [fol. 398] most of the standard practices that make up these core analyses, that zero is used when permeability cannot be measured, which is around .2 millidarcys.

Q. As a geologist and man of science in the oil industry, it is your opinion, is it not, that when core analysis of cores shows millidarcys zero it can't produce any oil from that particular sand?

A. That is a generally accepted practice, but those were not all of the considerations given in determining these sand thicknesses.

Q. You have testified, however, Mr. Montgomery, that the core analysis is the best method of determining the permeability of sand, did you not?

Mr. Williams: I don't believe the witness testified to that.

Mr. Bond: I am asking him.

Mr. Williams: You tried yesterday several times to get him to say it, but he never said it.

By Mr. Bond:

Q. Will you say it now?

A. I believe I testified to the effect that actual production tests were necessary to positively and conclusively prove the productivity of a well.

Q. Yes; that is true, and you said next to actual production tests that the core analysis was the best known scientific method.

A. I believe that is correct.

Q. Now, you didn't test these particular footage areas by well tests, did you?

[fol. 399] A. We did not.

Q. And therefore, in the absence of well test, the information that you received from your core analyses would, in your science be controlling, would it not?

A. Not necessarily in the consideration of working up the data to be used in preparing these maps. Probably I should elaborate on that just a little to the effect of what the procedure was that we used.

Q. Go ahead.

A. The Cement field was rather unique in that major companies did not control all of the acreage, and did not drill all of the wells, nor is it their practice to core 100 per cent all of the sand section. If we had had all of the sand section cored and we had recovered 100 per cent of that section cored, we would have probably used the core analysis——

Mr. Bond: If the Commission please——

A. ——practically exclusively.

Mr. Williams: Let him finish his answer.

Mr. Bond: I am going to object to his answer right now. I wish to object to the witness' testimony and his offer to explain, because he is assuming a state of facts which do not exist, never have existed, and cannot exist at this time, and I see no reason why he should testify to anything of that kind. Therefore, I move that the witness' explanation be stricken from the record.

Mr. Williams: The whole gist of the cross examination [fol. 400] has been to determine what they did and why they did it and how they did it. The witness now says he will tell them what they did, why they did it and how they did it.

Chairman Bond: The witness may answer your question first, and then make his explanation.

Mr. Williams: The witness, I believe, did answer his question, and went ahead to tell what we did and counsel said, "Go ahead and tell it", and then when he started he objected.

Mr. Bond: I am objecting to his explanation, because in his explanation he sets up a state of facts which does not exist and could not exist. He said, "ordinarily", he said "we would do something if we could take 100 per cent core of every well", which is something he further said could not be done.

Chairman Bond: The witness can explain after he has answered the question, and you may cross examine him on his explanation, which does not comply with the facts.

By Mr. Williams:

Q. Go ahead.

A. We were confronted with the fact that some wells had only samples while some wells had samples and drilling time but no electric log, other wells had samples, drilling time and electric log, while some wells, in addition to these, also had most of the section cored and analyzed. After each discussion as to how we could arrive at a just and unbiased consideration as to the thickness in all wells, we concluded that some of the zero permeability as outlined in cores [fol. 401] were so obscure in both electric log and samples, that we would work on these premises; that we would use all of the information available on each well, and included in

the net sand all of that part of the Medrano zone that was not shale or definitely lime, and would include all sand, irrespective of the fact that the permeability was zero, with the idea in mind that because some companies or individuals had taken some cores and had run analyses on them, until we could deduct two, three, four, five or six, or maybe even more, because they had more information, would be actually an injustice to them because we could not go that much in detail in regard to throwing out parts of the sand on the other wells. Keeping in mind that when the engineers went through to average the porosity to give a recovery factor, all of those pertinent facts in a local area in regard to a core analysis would be used. So that was our conclusion, thinking that it would be more simple, and more practical and would not necessarily be an injustice to anyone.

By Mr. Bond:

Q. In this particular case, then, your core analysis, which you have testified is the best scientific method of obtaining permeability of the sand, showed that there were 15—let me say 13 feet of non productive sand, which you included in your sand body as being productive, or oil contained sand, is that right?

A. I don't say that it was absolutely non-productive. As I stated before, the standard practice is that perme- [fol. 402] ability could be measured only above or about .2 of 1 millidarcy.

Q. But the core analysis showed it was non productive sand, that is correct, isn't it?

A. I believe that the report as put out by Core Laboratories, Incorporated, in which they show zero permeability, if they had considered it actually 100 per cent impermeable, they would not have put it on the side of how permeable. That, in other words, it was too low to measure, but it is not actually impervious.

Q. Tell the Commission on what basis on a core analysis for permeability is made by that particular laboratory.

A. It is less than .2 of 1 per cent.

Q. Less than .2 of 1 per cent of what?

A. Of permeability. I don't mean .2 of 1 per cent. I mean .2 of 1 millidarcy. I am sorry.

Q. Less than .2 of 1 millidarcy permeability?

A. Yes.

Q. How many millidarcys permeability is required in the Medrano sand section before a well will commercially produce oil?

A. I don't know.

Q. What use is made by your profession of the core analysis and the determination of the number of millidarcys permeability in a sand?

A. It is rather a relative thing in a formation. When you look at a core analysis and say that the permeability was around 1000, you would say that sounds pretty good. [fol. 403] Q. Tell the Commission how you use it.

A. You have it there in the record. That is the way I use it.

Q. You say that sounds good?

A. That is right.

Q. That means the oil will flow very freely through that sand?

A. At least through that little plug they get with the core.

Q. Isn't it difficult to get enough plugs close enough together to give a practical demonstration of what that well is, that is, its permeability to another core sand area?

A. The plug is approximately three-fourths of an inch in diameter.

Q. About a foot apart?

A. About a foot apart, and a plug is about an inch to two inches long.

Q. How big do you think the plugs ought to be, and how far apart do you think they ought to put them to make a practical determination of the permeability of the sand core?

A. I think they do it within practical limits the way they are doing it.

Q. Do you think when the laboratory says the permeability is zero per foot that means that the permeability is zero for the entire part of that covered by those particular samples and plugs?

A. They attempt in each case to get the plugs at a repre-[fol. 404] sentative place in the core, that is correct.

Q. I am asking you what you think about it. You think that a fair test a, fair indication of the permeability of the core for that part of it represented by these plugs?

A. It is a fair representation, yes.

Q. And you accept that and use it as a fact in your business, don't you?

A. We use it as an aid, yes.

Q. You take it as a fact, don't you?

A. No, sir.

Q. You don't?

A. No, sir. You can't gauge a tank by looking at a core analysis.

Q. Do you question the results of the laboratory?

A. Lots of times.

Q. You do?

A. Yes, sir.

Q. Do you find that the laboratory often times gives you an analysis of the core showing high permeability that it has not that permeability, and won't permit oil to pass through it?

A. Some of them that won't produce for some reason or other.

Q. Well, is that the case as to the Cement Medrano sand section?

A. I have not made any study on that end or type of work, but I have seen it happen other places.

[fol. 405] Q. Didn't you prepare the maps of the sand thickness in the Cement Medrano field you testified about?

A. I was one of the members of the geological committee that prepared them, yes, sir.

Q. And that was your business?

A. We had a lot of other business going on at the same time.

Q. But that was not anybody else's business, was it? Wasn't that your particular part of the business?

A. That was the geological committee's problem to work that out, yes, sir.

Q. Didn't you take into consideration all of the facts and all of the methods known to science in making that determination?

A. Yes, sir; that is the reason we did not use core analysis exclusively.

Q. But you did use core analysis?

A. That was one of our aids to form our final conclusion.

Q. And you made a careful study of the core analysis that you had before you, didn't you?

A. We looked at them, yes, sir.

Q. I say, you made a careful study of them, didn't you, in determining the thickness of this oil sand?

A. Oh, yes, we looked at them, in that if it was shown shale we would have certainly left it out.

Q. Did you or did you not make a careful study of them?

A. What?

[fol. 406] Q. Did you or did you not make a careful study of them?

A. Yes; we made a careful study of them, what you are considering.

Q. What?

A. What you are considering.

Q. I want to know if you made what you considered a careful study?

A. No, sir. I think the engineers did.

Q. Did you make a careful study of the core analysis for the purposes for which you used them in determining this sand thickness?

A. We certainly did, yes, sir.

Mr. Williams: I think, if the Commission please, this is getting repetitious. This witness explained they considered them, and why they did not use them.

Chairman Bond: You may proceed, gentlemen.

Mr. Williams: There is another error I want to correct before we overlook it. In the examination at the close of yesterday you were discussing the Edwards well in which 105 feet of thickness was attributed to the well.

Mr. Bond: Are you talking to me or the witness?

Mr. Williams: I am talking to anyone who wants to listen. This morning he was referring to Hartshorné well as having 105 feet of thickness. Now, by jumping from one well to another and from thickness to thickness, there is room for [fol. 407] error, and I think there has an error crept into

your cross examination in that respect, and I think we ought to correct it.

Mr. Bond: If the Commission please, I will be glad for counsel to correct any errors that are in the record. We certainly want this to be a correct record.

Mr. Brown: What well are you talking about with 105 feet? It may be two wells of 105 feet.

Mr. Bond: If the Commission please, the witness is now being examined as to core analyses and their effect, and the use that was made of core analyses in determination of the sand thickness.

Mr. Williams: And all of this was predicated upon earlier questions that refer to a particular well, which is a different well than you were talking about last night. I think you are getting the witness confused by referring to one well by name and using another well sand thickness.

Mr. Bond: If the Commission please, I don't know what counsel is talking about.

Mr. Brown: I say here they referred to a well last night just before we quit as being of a certain well and it had 105 feet of sand thickness. This morning the witness comes in and he tells us about the testimony he gave here yesterday, and now by referring, and I think inadvertently, to a well by a different name as having 105 feet. I just wondered if we are talking about the same well, or two different wells.

[fol. 408] Chairman Bond: They can say what they are talking about.

Mr. Williams: Are you talking about the same well we were talking about last night?

Mr. Bond: Let me ask the witness what he is talking about.

Chairman Bond: Gentlemen, you can bring this out on cross examination. If the witness is in error, bring it out on cross examination. There is no use discussing it when you gentlemen don't understand one another even.

Mr. Brown: Well, we don't, that is a certainty.

Chairman Bond: If you gentlemen let counsel proceed with his cross examination, then you can bring it out on redirect examination. The witness ought to be smarter than the lawyers, if he is a geologist, on geological questions. If he is letting the lawyer tangle him up, that is too bad for him.

Mr. Williams: The trouble is, if the Commission please, that there are here a great number of wells involved, a great number of thicknesses, and it is easy to confuse even the witness. It is hard to carry that in your mind. But we will——

Chairman Bond: You can bring that out on redirect examination. Proceed with your cross examination.

Mr. Williams: Yes; I will bow to the wishes of the Commission.

By Mr. Bond:

Q. Mr. Witness, the core analysis we have under discussion, and the core analysis that you asked the Commission to permit you to explain about this morning, has to do with the well which you marked No. 19, and which is the [fol. 409] Amerada Edwards No. 1, is that correct?

A. That is the one we were talking about yesterday afternoon. The first question you asked this morning was in regard to No. 1 Hartshorne.

Q. Yes; and you didn't answer that question, did you?

A. I did not.

Q. And you began talking about Amerada No. 1 Edwards, didn't you?

A. That is what I understood you referred to back there.

Q. And we have been talking about that one ever since?

A. I thought we had.

Q. I did too.

Mr. Williams: That is all I wanted, was to get the record straight.

Chairman Bond: You gentlemen will have ample opportunity to straighten your record on redirect examination, but let the witness and counsel proceed now. They understand one another, if you don't understand them.

By Mr. Bond:

Q. Now then, you have testified, and you tell this Commission that your committee agreed to omit from your consideration all sand sections shown by core analysis to have a permeability of zero millidarcys.

A. That is not what I said. I said we included all, and did not exclude it in our net sand thickness.

Q. You included it in your thickness, but you excluded [fol. 410] that part of the core analysis from your consideration?

A. No; we considered it.

Q. You considered it and decided to include it, although it showed it had no permeability?

A. That is correct.

Q. And permeability means the ability of the sand to permit oil to go through it, is that it?

A. That is one of its functions, yes.

Q. What are the functions that it has?

A. To retain or retard any type of fluid or gas from going through it, the permeability.

Q. Permeability is just the resistance that sand has to fluid passing through it, isn't it?

A. That is correct, yes, sir.

Q. And a millidarcy is just a measure of that resistance, isn't it?

A. No; it is a measure of its ability to pass through it.

Q. It is just the converse?

A. That is correct.

Q. Now, if you have zero millidarcys, that means then, for practical purposes, the oil will not pass through the sand, is that correct?

A. No, sir; I didn't say that. I said that zero permeability, as shown on the core analysis indicated that it has .2 millidarcy or less, but the fact that they show, or make a [fol. 411] notation under "Remarks", "low permeability" indicates not necessarily that it is positively impermeable.

Q. Well, "low permeability" would mean that it is close to zero, wouldn't it?

A. It has .2 per cent—.2 of 1 millidarcy, I should say.

Q. Would you complete a well out there in the Medrano sand in your sand section that showed zero permeability?

A. It would be unlikely you could get 100 per cent, and you probably would not try to complete the well.

Q. You would not complete it. Well, why not?

A. If you would core the well and get 60 per cent recov-

ery, and that 60 per cent recovery showed a zero, I would at least take a drill stem test before I plugged it.

Q. But you would not set casing?

A. In some instances I might, according to what the sample showed and our other information.

Q. Now, turn to your core analysis, and show what the core analysis showed about oil saturation at 5816.

A. We are still talking about the Edwards, are we?

Q. Oh, sure, we are still talking about the Edwards.

A. They didn't have one at 5816.

Q. Don't they have one at—what?

A. 5816.5.

Q. You don't have one, what?

A. A plug.

[fol. 412] Q. I thought you said you had a plug at 5816.5 that showed zero permeability.

A. That is what I say; they had a plug at 5816.5, but they did not have one at 5816.

Q. Let us get on the 5816.5, I beg your pardon. Tell the Commission what the core analysis shows with reference to oil saturation at that point.

A. 7.9 per cent is filled with oil.

Q. What does it show on the plug 5817.5?

A. Zero-zero.

Q. What does that mean?

A. It means that there was no residual oil in that plug, but if you will notice the next line in which it shows water percentage 59.2, which is abnormally high, and which in a lot of cases your core is flushed in varying degrees. It does not state on this core analysis what the salinity of this water was.

Q. What is what?

A. Salinity.

Q. What do you mean by Salinity?

A. Whether it is salty water or not.

Q. I see.

A. Consequently, we don't know how much of that was drilling fluid and that had flushed any oil out that was there.

Q. Now, what do you have in your oil saturation at 5818.2?

A. You have zero-zero oil saturation, and then again you [fol. 413] have 60 per cent water saturation.

Q. What does your core analysis show the oil saturation to be at 5845.5?

A. At 5845.5 oil saturation is zero-zero, and water saturation is 42.4.

Q. What is your oil saturation at 5846.5?

A. Zero-zero, with water saturation 43.3.

Q. What do you show at 5847.5?

A. Zero-zero oil saturation, and 44.7 water saturation.

Q. What do you show at 5848.5?

A. Zero-zero oil saturation and 39.2 water saturation.

Q. What is shown at 5849.5?

A. Zero-zero oil saturation and 43.5 water saturation.

Q. What is shown at 5883.5?

A. 12.4 oil saturation and 28.8 water saturation.

Q. What is shown at 5886.5?

A. 13.8 oil saturation and 34 per cent water saturation.

Q. And at 5887.5?

A. 15.5 oil saturation and 32.9 water saturation.

Q. And at 5888.5?

A. 11.8 per cent oil saturation and 30.4 water saturation.

Q. What about 5900 to 5901?

A. Which one was that? Pardon me.

Q. 5900 to 5907, I believe.

A. Do you mean——

[fol. 414] Q. How many plugs do you have between 5900 and 5907?

A. Eight.

Q. What do those eight plugs show on your oil saturation and water, reading from top to bottom?

A. Oil saturation is zero-zero, zero-zero, 15.5, 13.6, 9.3, 11.3, 8.9, and 5.4. The water saturation reading from top to bottom is 78.1 per cent, 82.7, 63.4, 58.5, 55, 60.9, 62.5, and 55.7.

Q. Now, in determining whether or not the last mentioned sector from 5900 to 5907 would produce oil, did you take into consideration the porosity of the sand?

A. That was mainly what we considered, to know it was sand. As I explained to you before——

Q. Does your core analysis show——

Mr. Williams: Let him finish his answer. He said, "As I explained to you before", and started to say something.

By Mr. Bond:

Q. All right; go ahead.

A. As I explained to you before, myself, and I believe every member of the committee will admit that that is a sorry sand, and if the entire sand section was composed of that you would have not much of an oil field, if one at all. But I tried to explain how we utilized all of the information available so as not to create an injustice to any one individual just because they had gone to the expense of core analysis.

Q. Yes; I understand that. I understand that. Now, [fol. 415] what does your core analysis show with reference to porosity at that point, that is, 5900 to 5907?

A. There were eight plugs taken from the point 5900.5 to 5907.5, inclusive, and reading from top to bottom those analyses show the following porosities: 7.8; 9.3; 14.2; 14; 15.1 per cent; 13.3 per cent; 12.3 per cent, and 12.9 per cent.

Q. All right. Now, with those porosities and the oil content, that is, the oil saturation as indicated, and considering the permeability as indicated, would you say that, as a geologist oil could be produced from that sand?

A. Not through that 7 foot section, it is my opinion it would not produce oil.

Q. I understand that your testimony as to other sections which constitute possibly 16 feet altogether, including this 8 feet, would not produce oil, and that you——

A. Well, in other words, if I only had this 7 feet of sand in a well?

Q. Yes.

A. I would form the conclusion that the well would be non-commercial, but if I had 20 or 30 feet of it in there in conjunction with other sand that would produce commercially, I would anticipate that this might give up a small amount of fluid through the life of that well, and consequently it cannot be disregarded 100 per cent, although normally you would say that if the well had only that kind of sand it would not be commercial.

[fol. 416] Q. What percentage of the oil in place in this sand do you think, in your opinion, could be produced in this particular well, that is, Amerada-Edwards No. 1?

A. That was not our problem.

Q. That is out of your province?

A. That was out of our province, yes, sir.

Q. But you thought some oil could be produced from that sand?

A. I thought we should include that in justice to all of the wells in the pool in which we did not have this type of concrete information, but the engineers in their study, which had to be more complete than ours, in regard to core analysis, in forming opinions, and their conclusions as to their average porosity and their recovery factor that was used would be influenced more by these core analyses than it would the geological committee.

Q. You do not tell this Commission, then, that these particular sand sectors would produce any oil at all, but you say the reason you omitted them was in fairness to the other wells in the field on which you did not have complete cores and core analyses, the reason you did not admit them?

A. We did not omit these. We let these in our net sand.

Q. I understand that, but you omitted them from your consideration and did not leave them out?

A. That is correct, yes.

Q. In other words, you did not consider the fact that your core analyses showed that the permeability was zero and [fol. 417] they probably would not produce any oil at all, and you included them in there because you didn't have the core analyses on a lot of other wells and you had to use electric logs on the other wells, and therefore you disregarded the core analysis on this well?

A. We did not disregard any of the facts. We used the facts to reach our conclusions on how to do it.

Q. But you included this sand in here with zero permeability for that reason?

A. We did, yes, sir.

Q. Now then, by that you say you inferred that the other wells in the field or pool, on which you did not have core analyses, would also contain a proportionate and

equal amount of sand with zero permeability and which would probably not produce any oil.

A. They had some streaks of that, the details of which were so obscure that we could not definitely pin it down to the foot.

Q. I don't believe you understood my question. I asked you if your committee did not, in the final analysis, infer that the other wells in the pool on which you did not have core analyses, had an equal or proportionately equal, I will say, amount of sand which the core analysis, if you did have one on each of the other wells, would have shown zero permeability as the core analysis showed on this particular Amerada-Edwards No. 1?

A. We knew they had some, but varying amounts, the detail——

Q. Had some what?

[fol. 418] A. Comparable to the zone you have called attention to.

Q. And which had some zero sands of permeability?

A. Yes.

Q. You felt that?

A. We felt quite sure that we could determine that from samples.

Q. From samples?

A. Yes.

Q. You say you could not determine it from samples?

A. We could.

Q. Knowing the sand had a zero permeability?

A. Yes.

Q. How could you?

A. By looking at it.

Q. Could you look at a sand and tell how many millidarcys it has?

A. No, sir.

Q. That is what you determine by the core analysis, the number of millidarcys permeability?

A. That is the reason a lot of coring is done, for analysis, but——

Q. Isn't that correct? Isn't that correct?

A. Isn't that what?

Q. The question I asked you.

Mr. Bond: Will you read it to him, please?

[fol. 419] (Last question read by the reporter.)

By Mr. Bond:

Q. That is what is determined by core analysis, isn't it, the number of millidarcys?

A. That is one of the things we determine, yes.

Q. You can do that by looking at a sand sample, can you?

A. No; not as to the number of millidarcys.

Q. Well, is there any other way to accurately measure the permeability, except by millidarcys?

A. That is correct, but you can still, maybe I am a little high on my ability, but I really believe we can look at samples that have zero permeability and can tell they have zero permeability.

Q. Isn't that kind of like a cattle man looking at a cow and guessing at his weight—or her weight.

A. I think there would probably be more exact——

Q. Accurate, to look at a cow?

A. No, sir.

Q. Go ahead; excuse me.

A. There would be more geologists that would look at a set of samples in which there is some zero permeability sand shown in there and agree that it was that way than there probably would be cattlemen guessing to the content or weight of a cow.

Q. I see; that is your opinion.

By Mr. Williams:

Q. A cattleman that is experienced can guess the weight of a cow pretty accurately, can't he?

[fol. 420] A. I have never been in that business.

By Mr. Bond:

Q. How close can you come to estimating the millidarcy permeability of sand of zero permeability from samples?

Mr. Williams: I think the witness said he could not determine the millidarcys. He can determine whether it

was near permeability, but he could not tell the number of millidarcys.

By Mr. Bond:

Q. I said "zero millidarcys."

A. I believe if it had zero permeability that would be my conclusion by looking at it, but whether it had 100, 125 or maybe 300, I would not attempt to guess. I would say it has some permeability.

Q. But if it had zero do you mean you can tell if it would not produce oil, is that right?

A. Sir?

Q. If it had zero permeability do you mean you could tell from that—by that measure, that it would not produce oil?

A. That particular cluster that I was looking at under the microscope, I would say it would not produce.

Q. It would not produce. Now then, will you please turn to your core analysis on the Amerada-Hartshorne No. 1, which you have marked on the map as control point No. 21.

A. I have it, which is in graph form.

Q. Does that disclose the permeability, porosity and oil saturation and water content of the analysis?

A. It does, yes.

[fol. 421] Q. How much of the core was recovered in that well?

A. I don't believe it exactly shows how much core was recovered, but the core—the graph showing the core analysis starts at 6035 and extends to 6186.

Q. Now, did you have an electric log on that well that you used in making the maps?

A. Yes; I have one.

Q. What does the electric log show the sand top to be?

A. 6020 hole depth.

Q. What does it show the bottom?

A. 6152 hole depth.

Q. Now, your core analysis, then, extends beyond the bottom of the sand, as shown by the electric log, does it not?

A. That is correct.

Q. And begins at a point 15 feet below the top of the sand, as shown by the electric log?

A. I didn't follow you then.

Q. I say, the core analysis begins at a point 15 feet below the top of the sand, as shown by the electric log?

A. That is right.

Q. Now, does the core analysis show any zero permeability, and if so, give the section from which the depth of zero permeability is shown.

A. From this graph I believe the zero permeability section was meant to be—because the dot is not exactly on the [fol. 422] zero line—from 6055 to 6058.

Q. Are there any other sections that show zero permeability?

A. And from 6110 to 6116, and 6139.5 to 6140.5.

Q. Is that all?

A. That is all that was included in the Medrano section, yes.

Q. That does not include anything below 6152?

A. That is right; it does not.

Q. Now, what is the thickness of the sand, as disclosed on your isopachous map at that point?

A. 132 feet.

Q. Now, that is the thickness of the sand as disclosed by the electric log, is it not?

A. The electric log, checked by samples, yes, sir.

Q. Now, you still tell the Commission that the core analysis is a better method of determining porosity, permeability, oil saturation and water saturation of a sand than the electric log; that is more accurate?

A. That is correct.

Q. Now, there are about 12 feet of sand that your core analysis shows to have zero permeability, is that correct?

A. I didn't add this up.

Q. Will you check this and see if I am correct in that statement, please.

A. In looking over it again from the graph, I would count ten feet.

[fol. 423] Q. Ten feet?

A. That may not check with my figures exactly, because these are curved lines.

Q. Well, I, in asking my question, did not know whether to include 1055 to 1056. I didn't know whether to include the 58 or not, and so as to the other.

A. 10 or 12 feet, either one, would be accurate enough, I believe.

Q. What does the core analysis actually show the number of feet of sand with zero permeability?

A. Between 10 and 12.

Q. Can't you say definitely whether it is 10 or 12 from looking at the core analysis?

A. No, sir.

Q. You cannot? Now, that 10 or 12 feet of sand with zero permeability would not, in your opinion, produce oil in this Medrano sand, would it?

A. It is unlikely to produce very much, I will say that. I would not say it would not produce anything at all.

Q. You would say the same thing about this one you said about well No. 19, wouldn't you?

A. I would not answer the question or try to the same way I did there.

Q. It is the same sort of a situation?

A. That is correct.

[fol. 424] Q. With the same sort of data?

A. That is correct.

Q. What does your oil saturation show at this point, or those points that have zero permeability?

A. On this graph it does not give us any points like it did before, except in a graphic way, but the zone from 6056.5 to 6057.5 is shown as having zero oil saturation.

Q. And water; what does it show on the water?

A. It does not show.

Q. What about the other two sections?

A. Zero oil saturation, and water shown from 6110.5 to 6111.5, and zero oil saturation was shown at 6139.5 to 6140.5.

Q. Now, those sand sectors were included in your figures of sand thickness?

A. That is correct.

Q. And were not deleted or omitted therefrom?

A. They were not.

Q. Now then, will you turn to your core analysis on the well which you have marked No. 22 on the map, and which is the Hartshorne-Amerada No. 2, and tell the Commission what sections of that core analysis contains zero permeability.

A. The analysis shows zero permeability on the Amerada No. 2 Hartshorne from a plug at 6222.3 feet hole depth, which is the analysis shown as zero-zero permeability.

Q. How many feet of core was recovered from that well, [fol. 425] and at what depth.

A. It is not shown on this analysis here without——

Q. How many feet of core, and at what depth analyzed?

A. Core 61—the first plug that was drilled was 6160.5. There were three plugs, including that one, down to 6162.5, then there was a gap in the record, and the next one at 6200.5, and then one at approximately one foot intervals down to 6238.5.

Q. Is that all?

A. That is all.

Q. That is approximately about 40 feet of core, isn't it?

A. That is correct.

Q. Now, do you have the electric log on that well, and what is the top of the sand as shown by the electric log, and that is one of the wells in which you got supplemental information.

A. The engineers and geologists had run this well with Schlumberger, without benefit of sample information, drilling time, called the top of the conglomerate and sand at 6128.

Q. That is what the electric log shows?

A. That is what was put on there by Schlumberger, yes, but the geological committee using other information they had——

Q. Consisting of what?

A. Consisting of drilling time and samples, and the benefit of the geologist of the Amerada that actually sat on the well, calling the top of the sand at 6150, and while the top gross Medrano zone may be construed as from 6128, we [fol. 426] dropped to 6150 in calling the top of the net sand.

Q. What does the electric log show the bottom of the sand to be, the depth of it?

A. 6280.

Q. And what conclusion did the committee reach about the depth of the base of the sand?

A. We agreed with the electric log in that case.

Mr. Williams: Just a minute.

By Mr. Bond:

Q. Now, what is the thickness of the sand in the well as shown by your isopachous map?

A. The net thickness——

Q. I don't understand that.

A. The net thickness of the sand in the well was given as 130 feet, was the net sand given the well, of which 64 feet was given as being in the oil zone.

Q. Now, state to the Commission the depth of the base of the oil sand as found by the committee in the cores from visual observation in the field, as well as consideration of the core analysis and verification of the electric log.

A. The base of the oil sand and top of the water sand was called at 6214, or minus 4741.

Q. At what depth does the core analysis show the base of the oil sand and the top of the water sand?

A. 6214.

Q. So, you took the figures as shown by the core analysis [fol. 427] in determining the base of the oil sand in this particular control point.

A. That is correct.

Q. And that was the best scientific information, was it not, at this well?

A. It actually would not have been necessary to run a core analysis to tell where the top of the water was, it was so apparent. But this was a double check.

Q. But your core analyses, as usual, proved that your eyes were right, didn't they?

A. That is correct.

Q. Now, will you state to the Commission at what depth the electric log shows the base of the oil sand and the top of the water sand?

A. The electric log indicated water, but as to the exact footage, they would call it at about 6216, and so indicated on their print that they sent out of the well.

Q. Now then, in determining the thickness of the sand at that control point, the committee used the top of the oil sand as fixed by the electric log, is that correct?

A. No, sir.

Q. That is not correct?

A. No.

Q. The electric log fixed the top at 6128, did it not?

A. That is right.

[fol. 428] Q. And the committee, from visual examination of samples and cores, then fixed the actual top of the oil sand at 6150, is that correct?

A. There were not any cores taken that high, but samples were taken, and the practice in most cases being to circulate on top of the sand, I don't know definitely this well stopped circulating at the top of the sand, but knowing the geologist in charge of the field being competent on the job, aware of where it should have been, and samples were kept representative of the depth in all cases.

Q. And in fixing that top of the sand you took into consideration and used as the determining factor what the geologists said about the sand samples that were taken at the time the well drilled into the sand, is that correct, together with all other sand cuttings you had available?

A. He not only looked at those samples; those samples were looked at—I believe I personally looked at these samples.

Q. You looked at the cutting samples?

A. Yes. Probably the rest of the committee—probably not 100 per cent of the committee looked at all of the samples in the field, or this individual well even.

Q. You looked at those samples, you listened to what the geologist said who was there when the well was drilled in, and you inferred that the top of the sand was 6158 feet?

A. Used all of the information we had, and concluded the [fol. 429] top of the sand was 6158, yes, sir.

Q. You didn't have a core at 6150, did you?

A. No, sir.

Q. But you did have cuttings and samples?

A. Which are the same thing.

Q. Do you mean to tell the Commission that cuttings and samles are the same as the core?

A. No; that was not what you said.

Q. I didn't think you did.

A. That was not what you said.

Q. That was not what you said either.

A. I said we didn't have a core and you said we did have samples and cuttings, and I said they are the same thing; cuttings and samples are considered the same thing.

Q. Cuttings and samples are the same?

A. Considered the same, yes.

Q. Now, Mr. Witness, I wish you would please turn to your core analysis of the control point which you have marked 1, 2, 3 on the map—not 1, 2, 3, but 23, and which is the Phillips-Hartshorne well No. 1. Do you have an analysis?

A. Yes.

Q. How many feet of core was recovered from the well?

A. These recoveries are not added up on this analysis.

Q. Can you compute them from the analysis?

A. What you refer to as the distance in the wells cored, [fol. 430] or actual recovery?

Q. Feet, yes, of the core that was analyzed.

A. The top core of the sand zone was 5637, and was cored continuously to 5742 from the above point.

Q. Is that the total number of feet of core that was taken from the well?

A. It was.

Q. There was no further recovery of core?

A. We cut a couple of cores—no; we cut more than that. We cut three or four cores away back up in the hole.

Q. But that did not affect the Medrano sand particularly?

A. No.

Q. Was that core analyzed by a regular core laboratory?

A. It was analyzed by the Phillips Petroleum Company laboratory.

Q. Do you have that electric log on that well?

A. I don't believe I have.

Q. Where does it show the top of the sand to be, the oil sand top?

A. I don't have the electric log here, and I don't believe I could tell from memory.

Q. Just a minute. We may have it. If we do, I will hand it over to you. What does the core analysis show with reference to zero permeability of any particular section?

A. It does not actually have a zero-zero at any of the spots.

[fol. 431] Q. Does it have zero in any of them?

A. No, sir.

Q. What was the top of the oil sand in this well, as called by the committee?

A. 5615 hole depth.

Q. What was the bottom of the oil sand, as called by the committee?

A. 5740.

Q. What was the thickness of the sand in the well, as shown on your isopachous map?

A. 125 feet.

Q. Well, now, the top, as called by the committee, was 6515, is that correct?

A. That is right.

Q. And the bottom 5740, is that correct?

A. Yes, sir.

Q. And it was considered by the committee that the sand from top to bottom should be included in the sand thickness map?

A. That is correct.

Q. Look at your core analysis on the control point marked 24 on your map, which is the Phillips-Hartshorne No. 2, and state to the Commission how many feet of core are analyzed in that analysis.

A. Do you have reference to those cores pertaining only to the Medrano sand?

Q. Oh, yes, and just to the oil section.

[fol. 432] A. There were only two cores taken in the Medrano zone, the top one being from 5807 to 5817, and the other one from 5867 to 5881.

Q. Would you consider that a sufficient core to substantially determine the thickness of the Medrano sand section at that point?

A. I would not.

Q. What part, or in what way was that analysis used by the committee in determining the sand thickness at that point?

A. It was used only to the extent that there was no shale recovered in those cores.

Q. No shale was recovered in those points?

A. That is right.

Q. Well, if there had been shale recovered in them, you would have deducted that portion from the sand thickness, wouldn't you?

A. We would have.

Q. Did you have any shale recovered in any of the cores on any of the control points in this pool, that is, within the body of the sand?

A. I don't remember whether we did or not.

Q. Do you have an electric log on that well?

A. It is down at the office.

Q. The core analysis of that well was prepared by the Phillips Petroleum Company laboratory?

A. Yes, sir.

Q. And you have no electric log available here at this time?

[fol. 433] A. I don't have one out here, no.

Q. So you have no records with you at this time that would show either the top or the bottom of that—that is, any of your work sheets or the records from which you determined the top or the bottom of the sand on your isopachous map, is that right?

A. I have now.

Q. Oh, you have now?

A. Yes.

Q. Would you tell the Commission, then, the top of the sand, as shown by your electric log?

A. The top of the sand on the No. 2 Hartshorne of Phillips, 5786.

Q. And the bottom of the oil sand and top of the water?

A. 5927, the base of the net sand.

Q. May I examine your log a minute, Mr. Montgomery?

A. The electric log?

Q. Yes.

A. Yes.

Q. What is the thickness of the sand at that point as disclosed by your isopachous map?

A. 141 feet.

Q. Which agrees with the top and bottom of the sand as shown by the electric log?

A. That is correct, yes.

Q. Now then, will you turn to your core analysis on [fol. 434] control point No. 25, as marked on the map, which is the Phillips-Margaret No. 1 well, and state to the Commission how many feet of core was recovered from that well and analyzed.

A. Phillips Petroleum Company No. 1 Margaret was cored to the Medrano zone from 5997 to 6012, recovering 14.6 feet; cored from 6046 to 6061, in which 15 feet was recovered; 6079 to 6094, and recovered 13.6 feet, and cored from 6094 to 6106, in which 10.7 feet was recovered. That was the extent of it.

Q. Was that a sufficient core to substantially determine the sand thickness of the Medrano oil sand at that control point?

A. Not in exactness, no, sir.

Q. In what way was the core deficient?

A. In that it did not core the entire section from top to bottom.

Q. Do you have an electric log on that well?

A. I do not have one with me.

Mr. Williams: By courtesy of the Palmer Oil Corporation, here it is.

By Mr. Bond:

Q. Will you tell the Commission the top of the oil sand, as shown by the electric log?

A. The electric log calls the top of the sand 5982.

Q. All right; and the bottom?

A. 6104.

Q. And what is the thickness shown at that point on your isopachous map?

[fol. 435] A. 122 feet.

Q. And that agrees exactly with the top and bottom of the sand as shown by the electric log, does it not?

A. Yes; as where they mark it, it so happened that they must have talked to the geologist that was there on the well when they made the log, because they have an upper zone conglomerate, and which they call conglomerate. Normally the electric log within itself, they would hesitate to call that conglomerate without some other information.

Q. Does your core analysis show any sectors with zero permeability?

A. It has no point with zero under the line indicating permeability.

Q. Does the core analysis indicate any sectors of the sand that would have sufficient permeability to produce oil?

A. It does not so state.

Q. Now, that analysis was made, I believe you said, in the Phillips Petroleum Company laboratory?

A. That is correct. There will be some slight variations in different laboratories, because there is a human element enters into the making of these calculations.

Q. Would you turn to your core analysis on the well located at control point No. 41, as shown on your map, which is the Phillips-Petroleum Company Oaks No. 2?

A. I have it.

[fol. 436] Q. What was the number of feet of core recovered in that well?

A. These photostats are all mixed up as to continuity. I believe these were duplications of the first two sheets of the analysis pinned together, and the last two sheets are not here. I will see if I can find them.

The Medrano sand in the No. 2 Oaks, as by the report, was shown to be topped at 5717, and was cored from 5726 to 5741, with recovery of 13 feet, or 87 per. cent. The top foot of the core from 5726 to 5727 was hard, dense sandy limestone, similiar in character to the limestone zones that have been found in other Medrano sand wells.

Q. What depth was that?

A. The foot from 5726 to 5727.

Q. Was there any other core recovered from that well?

A. Yes.

Q. What was the footage depth of the recovery?

A. There were two methods of coring this well. One was with regular core barrel, and the other was with a Bureau of Mines Pressure core barrel. In the report accompanying the analysis this remark was put out by the core laboratory: "First formation to core 5726 to 5741, with recovery of 13 feet. The Bureau of Mines-Carter pressure core barrel was then employed to core the section from 5741 to 5823. The core recovery by the Bureau of Mines-Carter pressure core barrel was 60.5 from the 82 feet of formation cored, or 73.9 per cent. Conventional core was resumed at 5823, and the core was completed at 5879.5 [fol. 437] feet."

So then the total section cored would be from 5726 to 5879.5.

Q. In your opinion was that substantially a sufficient amount of core recovered in order to determine the sand thickness at that point?

A. No.

Q. Do you have your electric log on that well?

A. No.

Q. Was one made?

A. Yes.

Q. Is it in the records of the Phillips Petroleum Company?

A. No; I think there is one there that is available to the public, and it has been released to the Universal and other well exchanges.

Q. Can you produce your electric log on that well?

A. It is down at the office.

Q. You don't have it here?

A. I don't have it here; no, sir.

Q. But you could produce it?

A. Yes, sir.

Q. And will you do so before the hearing is concluded?

Mr. Williams: By courtesy of the Palmer Oil Corporation, here it is.

A. It has been released to Universal Blueprint & Supply Company, and was indicated in this letter.

[fol. 438] Q. Will you tell the Commission what the electric log shows to be the top of the oil sand at that point?

A. The engineers and geologists that worked up the Schlumberger without benefit of any other information, called the top of the sand at 5653.

Q. And where does the electric log show the bottom of the oil sand to be?

A. 5853.

Q. Now, at what depth did the committee find the top of the sand to be?

A. At 5710, instead of 5653.

Q. And at what depth did the committee find the bottom of the sand to be?

A. We agreed with the electric log, at 5853.

Q. What additional information did the committee have at hand, and evidence, to determine the top of the sand?

A. They had samples and drilling time and benefit of personal observations made on the well at the time it was drilled.

Q. Was the core analysis used in making this determination?

A. It was used in conjunction with the other information, yes, sir.

Q. What is the top of the sand as shown by the core analysis?

A. We were already in the sand when coring was started, which had been determined——

Q. So the core analysis does not show the top of the sand?

[fol. 439] A. No, sir.

Q. Then the top was fixed from observation of samples and cuttings and drilling time and the observation of the geologist who was present at the well at the time the bit went into the sand, is that right?

A. That is right.

Q. You wouldn't know who the man was that was out there?

A. I was.

Q. You were there?

A. Yes.

Q. And it was your opinion at that time that the top of the sand was encountered at 5710?

A. Yes; and it was checked by Lawrence Muir of the Amerada, who was very active around that well in those days.

Q. Did you and the Amerada geologist determine that at the time the well went into the sand, or later after examination of further information?

A. We examined it at the time it went in. That is the reason we started coring, because we were in the sand.

Q. You decided at the time the top was at 5710, and that has been your opinion ever since?

A. That is the top.

Q. That was your opinion?

A. Yes.

Mr. Williams: It was against the company's interest to [fol. 440] have it at that point, as against the one as shown on the electric log.

A. 5710 happened to be the top of the sand.

By Mr. Bond:

Q. You never do anything against your company's interest?

A. They think so sometimes.

Q. And didn't you test the sand anywhere above 5710?

A. I would have to check my records to be positive on that. I don't know whether a separate test had been made of that well or not. It so happens that that was three and a half years ago, and I was out of the state at about the time the well was being tested. I could check up on that. It is my recollection that sometime during the completion of the well that upper zone was perforated, but I am not positive as to that.

Q. Would you look on your Schlumberger and see if there are any notes on that that might refresh your recollection?

A. It is indicated on this Schlumberger, which is a record made by some of the members of the Palmer Oil Corporation, that a plug was set at 5700, which would be above the top of the sand, and that the pipe was perforated at 5660 to 5700.

Q. Does that notation serve to refresh your recollection in the matter any?

A. No; but it further confuses me, in that I don't know the sequal of the events that took place in there, because they have a note of failure previous to that with the dates of

flowing, then they set a plug in the bottom part, and ap-
[fol. 441] parently this is the upper part separately, then it does not give the record of exactly what happened, other than they got 3000 feet. I don't know what they mean by that. Then, as of 10-19 they state two and a half in the tubing, about 5883, after which—prior to which they must necessarily have drilled the plug out.

Q. 5883 is below the bottom of the sand, what appears from the electric log as found by the committee?

A. That is right, but I don't believe the pipe was perforated that low.

Mr. Williams: Why speculate?

By Mr. Bond:

Q. Was the water-oil contact found in that well?

A. How is that?

Q. Was the water-oil contact found in that well?

A. It was not.

Q. Now, turn to your core analysis and state to the Commission whether or not it discloses that any portion of the sand section had a zero permeability, and by "zero permeability", I mean the permeability so low it would not produce oil.

A. There are no zeros under the line indicating permeability.

Q. What is the lowest permeability that is shown on the core analysis?

A. One, or less than one.

Q. Millidarcys?

A. Yes.

[fol. 442] Q. How many millidarcys do you usually have in the Cement field before you consider the sand is productive.

A. I don't know.

Q. You have no opinion?

A. I do not.

Chairman Bond: The Commission will recess until 1:30.

(Witness excused.)

(Whereupon, at 12 o'clock noon, a recess was taken until 1:30 o'clock p.m. of the same day.)

[fol. 443] Afternoon Session 1:30 P.M.

Chairman Bond: Are we ready to proceed?

A. J. MONTGOMERY, recalled, testified further as follows:

Cross-examination (resumed).

By Mr. Bond:

Q. Mr. Montgomery, referring to the control point which you have numbered 41 on your map, being Phillips Petroleum Company-Oaks well No. 2, I will ask you to state if you had for your consideration in determining the sand and thickness of the Medrano sand at that control point the Bureau of Mines core analysis from the core that was taken from that well?

A. I don't have it here. I was there when the cores were pulled from the hole and looked at most of them visually at that time, and I believe that I had a report that came to the office from the Bureau of Mines on that. I don't believe there is one in this file or records here.

Q. Did your committee consider that report of the Bureau of Mines in making a determination of the sand thickness?

A. I don't remember that we did.

Q. Was the report available to you for study and consideration?

A. Yes, sir.

Q. Will you tell the Commission why you failed to consider that Bureau of Mines core analysis on this particular well?

[fol. 444] A. I don't think that we failed to, but even if we did fail to examine it very carefully, the other information we had was sufficient.

Q. In other words, you don't know, then, whether you examined the Bureau of Mines core analysis or not on this well?

A. I don't remember we did in the committee. I wouldn't say yes or no.

Q. Do you have any record that would disclose whether or not that report was taken into consideration by your committee, or any member thereof, in reaching its conclusions?

A. No, sir.

Q. Is that report available to you from the Phillips Company?

A. Yes; it is.

Q. Could you furnish it here to the Commission?

A. I think I have one in the files down at the office, yes.

Q. But it is not available at this time?

A. No; I don't have it with me.

Q. Will you bring it out the next time we come back here?

Mr. Williams: Will there be a next time?

Mr. Bond: Oh, yes, from now on.

Mr. Williams: Yes; we will furnish it.

By Mr. Bond:

Q. Mr. Montgomery, will you refer to the Phillips Petroleum Company's laboratory analysis on the Oaks No. 2 and tell the Commission what sectors carry a permeability [fol. 445] of 1 or less?

A. Those carrying a permeability of 1 in that was from 5726 to 5727. Do you want the ones just 1 or over?

Q. 1 or less, yes.

A. The plug was pulled at 5837.7 and 5838.4.

Q. Excuse me, what was the one just before that?

A. 5837.7, 5838.4, 5847.5, 5848.3, and 5876.5.

Q. Now, do all of those have a permeability of 1?

A. Or less.

Q. Which ones have a permeability of less than 1 of those you have named?

A. I neglected to mention one of 5820.2, which was .4 millidarcys.

Q. Will you give the footage and millidarcys on the other points at which the analyses were made?

A. At 5826 to 27 was 1.0, the one mentioned at 5820.2 was .4 millidarcys; 5837.7 was .7 millidarcys; 5838.4 was .2 millidarcys; 5847.5 was .8 millidarcys; 5848.3 was .7 millidarcys, and 5876.5 was .5 millidarcys. I believe that covers them.

Q. How many feet, then, of sand would you have with a permeability of less than 1 in that core?

A. Roughly, 7 feet, considering that each plug represented a foot of core.

Q. What is the highest millidarcy shown on any plug taken from that core?

[fol. 446] A. I am not so sure but what I did not make a mistake in reading this photostat here. It is rather dim. Would you bear with me a moment while I try to check this thing. I did definitely make a mistake.

Q. Would you like to correct your mistake in the record, Mr. Montgomery?

A. Yes.

Q. Will you do so, please, sir?

A. In other words, I believe I had better start out answering the question all over again, in that this portion of the core analysis on the Oaks No. 2 that shows 1 or less millidarcy was at 5820.4, which showed 1 or less than one.

Q. Would you give the millidarcy or percent thereof?

A. Each show 1 or less than 1 millidarcy.

Q. Is that what they show, 1 or less than 1?

A. Yes.

Q. I see. All right.

A. 5836.9 was 1 or less than 1; 5848.2 was 1 or less than 1.

Q. 58 what?

A. 5848.2 feet.

Q. Does that analysis show in words and figures, "1 or less than 1"?

A. No; it does not.

Q. What does it show?

A. It shows a "1" with a "v" on the side of it to the [fol. 447] left of the figure one.

Q. "1" and then a "v" on the left side of it?

A. Yes, sir.

Q. That means 1 or less than 1?

A. Yes.

Q. That is, the "v" does?

A. Yes. 5850.9 is 1 or less than 1; 5876.3 is 1 or less than 1.

Q. There apparently were two sets of analyses made on this well, in that another photostat here of the Oaks No. 2 core analysis does show that at 5726.1 feet the permeability was 1 or less than 1, and at 5726.8, 1 or less than 1?

A. I believe that is correct.

Q. Now, the point 5876.3, that is below the bottom of the sand, isn't it?

A. I didn't check that as I went through it.

Q. I believe your testimony is that the bottom of the sand was 5853. Is that correct?

A. That is correct.

Q. Then the point given at 5876.3 would be below the body of the sand which you took into consideration?

A. That is right.

Q. Now, you did not deduct the strata containing the permeability of less than 1 millidarcy from the sand thickness as you showed on your isopachous map?

[fol. 448] A. That was within the net sand total thickness. We did not.

Q. How many feet of that core had a permeability of less than 1, according to your core analysis report?

A. I would say slightly less than 5 feet.

Q. When you say "slightly less than 5 feet", you assume that the same permeability obtains for about six inches on each side of each plug, is that correct?

A. Approximately that. I was roughly looking as to the core, from where to where, was represented by this plug.

Q. Now, Mr. Witness, the figures which you first gave us, which contain millidarcy figures in decimal fractions——

A. I was reading the wrong line.

Q. You were reading the wrong line?

A. That is correct.

Q. They were not even permeable?

A. That is right.

Q. You have not made that mistake in advising the Commission as to the permeability of core analyses on any of these other wells you have testified about, have you?

A. I hope not.

Mr. Williams: You have been checking them, haven't you, Mr. Counsel?

Mr. Bond: I have no way of checking the witness, because he has the records. I don't have a copy of it at all.

Mr. Williams: You have had copies, haven't you?

[fol. 449] Mr. Bond: No; we have not. Perhaps we can introduce the records to take care of that part of it a little later on.

By Mr. Bond:

Q. Now, Mr. Montgomery, I wish you would furnish the Commission the Bureau of Mines report of this particular Oaks No. 2 well.

A. I have so made a note. Yes; I will do that.

Q. Now, will you refer to that core analysis on your control point which you have marked No. 47 on the map, and which is the Amerada-Beemer No. 1, and advise the Commission how many feet of core were analyzed in that analysis?

A. I would say 41.

Q. Which is your control point No. 47 that you have marked on the map, the well is Amerada-Beemer No. 1?

A. I have it here.

Q. Would you advise the Commission as to the number of feet of core that were analyzed?

A. It shows the analyses for the Medrano sand cored in the Beemer well were between 6082 and 6152.

Q. And that is approximately 90 feet of core?

A. That is right.

Q. Is that substantially the amount of core there is to determine the thickness of the Medrano oil sand at that point?

A. Not in exactness, no.

Q. Do you have an electric log on that well?

A. Not at hand.

[fol. 450] Q. Did you use the electric log of the well in determining the top and bottom of the oil sand?

A. Electric log, as well as samples and information and drilling time, yes.

Q. Your company does have that log, I take it?

A. Yes; we do.

Q. Can you furnish that to us—to the Commission?

A. I have borrowed one here.

Q. Do you have the electric log?

A. I have it in my hand at this time, yes.

Q. Now, what does the electric log show the top of the sand to be?

A. It is marked on the electric log by the engineers that run—that made the survey for a Schlumberger—I can't read the footage on the photostat—6081.

Q. And the bottom?

A. The bottom was not drilled in that well.

Q. You mean the well did not drill through the sand?

A. It did not.

Q. At what point was the well stopped?

A. At 6160.

Q. Now, what did the committee find the top of the sand to be at that point?

A. Pardon me, I didn't catch that.

Q. At what depth did the committee find the top of the [fol. 451] sand to be at that point?

A. At 6081 was so-called, that is——

Q. And the bottom?

A. It was not drilled.

Q. And what depth did the committee find the bottom of the sand to be?

A. We did not find the base of the sand in that well, because it was not drilled.

Q. Did you establish a sand thickness at that point on your map?

A. No. The only way we did it was to say that it drilled 79 feet, plus that it drilled 79 feet and they were still in sand, so we assumed at that point the sand was 79 feet, plus, in thickness.

Q. Will you look at your isopachous map, which has been marked Exhibit 57, and state to the Commission the thickness of the oil sand at that point, as disclosed by your map?

A. Between 125 and 150 feet.

Q. Will you look at that again, Mr. Witness? Now, state to the Commission how you arrived at that figure, or how the committee arrived at the figure.

A. An exact thickness at that point was arrived at through no other means than contouring from the known point in proximity to it.

Q. Will you point out to the Commission the known [fol. 452] point in proximity to it?

A. To the east of it, Stephens Petroleum No. 3 Plummer in the Southwest Quarter of 34; to the northeast of the Beemer well is Phillips No. 6 Fletcher, in the Northwest of 34.

By Mr. Williams:

Q. Give the control point numbers on those wells. It is not on the map. Let it go.

A. And to the north and northwest of the Beemer well is Gulf No. 1 Sherritt and Gulf No. 4 Sherritt in the Northeast Quarter of Section 33.

By Mr. Bond:

Q. Now, do you have the depth, that is, did you have the footage at which the bottom of the oil sand was in the Stephens No. 3?

A. No. All we knew was it was in excess of 164 feet.

Q. And do you have the footage of the sand in the Phillips No. 6 Fletcher?

A. We did.

Q. Did you have the bottom of the sand in the Gulf No. 1 Sherritt?

A. We did.

Q. And did you have the bottom of the sand in the Gulf No. 4 Sherritt?

A. We did not, but we knew the sand was in excess of 167 feet.

Q. Now, tell the Commission what wells, in addition to the Phillips No. 6 Fletcher and the Gulf No. 3 Sherritt that you did have the bottom of the sand definitely fixed in, and [fol. 453] which you used to determine the bottom of the sand depth in Beemer No. 1?

A. Well, No. 1 and 2 Sherritt in the Northeast Quarter of Section 33; Stephens Petroleum No. 1 Pohlemann in the Northwest of 33; Phillips No. 5 and No. 7 Fletcher in the Northwest of 34 would be adequate control for determining, and they had at least as much as 125 feet of sand above the water in the No. 1 Beemer.

Q. Now, the Stephens Petroleum Company No. 1 Pohlemann, the sand thickness there is 89 feet, is it not?

A. That is right.

Q. What is the depth of the bottom of the sand in the Stephens No. 1 Pohlemann?

A. Minus 4555.

Q. That is below sea level, is it not?

A. That is correct.

Q. Now, what is the depth of the bottom of the sand in the Gulf No. 1 Sherritt?

A. Minus 4469.

Q. And that depth is below sea level, is it not?

A. That is the reason the term "minus" is used before it.

Q. Whenever the term "minus" is used before the footage that means it is that much below sea level?

A. That is a general method of making maps.

Q. And if no sign is used before the number that means from the top of the ground?

A. That is right.

[fol. 454] Q. Now, what is the depth of the bottom of the sand on the No. 2 Sherritt-Gulf?

A. Minus 4329.

Q. What was that again?

A. Minus 4329.

Q. Now, what is the depth of the bottom sand on the Phillips No. 7 Fletcher?

A. Minus 4114.

Q. What is the depth of the bottom of the sand on the Fletcher No. 5 Phillips?

A. Minus 3651.

Q. Now then, in determining the bottom of the—or the depth of the bottom of the sand in the No. 1 Beemer, were any other figures used, that is, information used other than the depth of the bottom of the sand in those five wells which you have enumerated, and, of course, the other two, the Sherritt No. 3 and Fletcher No. 6?

A. Yes; you would also use Phillips No. 2, 3 and 4 Oaks in the Southeast Quarter of Section 34, would be held in the contour area.

Q. Would you use any other figure, data or information than that in determining the bottom of the sand in the Beemer No. 1?

A. You would use your whole structural picture in the rate of dip to establish a control factor, because of their proximity to that well, and the fact you knew it would have [fol. 455] to be lower if the well was drilled, because they were still in the sand.

Q. Then in addition to the depth of the bottom of the sand on the ten wells which you have enumerated, you would use also the general dip of the sand in the pool?

A. That is right, but you would use those other wells to get the local picture.

Q. Would you use anything else, now, besides the depth of those wells and the general dip of the area?

A. Well, probably not, except your experience in contouring similar conditions.

Q. Now, what is the depth of the bottom of the sand in the No. 3 Gulf-Sherritt?

A. The base of the sand in the Gulf No. 3 Sherritt, minus 4330.

Q. What is the depth of the base of the sand in the Phillips No. 6 Fletcher?

A. Minus 4437.

Q. And what is the depth of the bottom of the sand in the Oaks No. 3?

A. The base of the sand in the Phillips-Oaks No. 3, minus 4497.

Q. And the Oaks No. 2?

A. Phillips No. 2 Oaks had the base sand at minus 4386.

Q. And Phillips-Oaks No. 4?

A. Minus 4379.

[fol. 456] Q. Will you now explain to the Commission how you used those figures, and what figures of the dip in the area you used, and the method and process you went through in determining the depth of the bottom of the sand on the Amerada Beemer No. 1 well.

A. We contoured the area as if the Beemer had not been drilled, following normal rules of contouring.

Q. What are the normal rules of contouring you followed in this instance?

A. Contouring on 100 foot intervals in an attempt to make lines so that each point on that line would be at that even 100 feet below sea level.

Q. Go ahead.

A. That is all there is to it.

Q. That is all there is to it. Now, tell the Commission the depth of the bottom of the sand on the Beemer No. 1.

A. We don't have the base of the sand on the Beemer No. 1.

Q. I know, but your map shows it, doesn't it? It is between 100 and 150 feet, isn't it?

A. No; that was not the question you asked at that time.

Q. Well, tell the Commission, then, the depth of the bottom of the sand in the Beemer No. 1 as disclosed by your map.

A. From our contouring of the adjacent control we arrived at a contoured base of the sand depth on the No. 1 Beemer at about minus 4820.

Q. Now, will you turn to your map that shows the con- [fol. 457] tours of the bottom—is that the one you have there that shows the bottom of the sands?

A. Yes; that is the one we have been talking about.

Q. That is the one you are looking at now? I want to get myself up here so I can see it too. I can't see that far.

Q. Now, I will ask you to state if it is not a fact that the Beemer No. 1, the top of the point—that is, the point at which the well penetrated the top of the sand was below, that is, was south or to the west of the oil-water contact, as you show it on your map? That is correct, isn't it?

A. I don't know hardly what you mean by your question.

Q. Well, I will ask you if it is not a fact that the point at which the Beemer No. 1 contacts the top of the oil sand is not south and west of the point at which you place the oil-water contact line on your map?

A. That is right.

Q. That is correct, is it not?

A. Yes.

Q. Now then, if you continue drilling on down in the Beemer No. 1, would you drill into the water sand? You would, would you not?

A. That is right.

Q. But the Beemer No. 1 well was not drilled far enough to get to the water sand, was it?

A. That is right.

Q. It stopped before it got there?

[fol. 458] A. That is right.

Q. Now then, you show that well to be located on your contour about 4820, is that correct?

A. That is where, from contour, we would have the base of the sand fixed.

Q. That is the base of the sand contour.

A. Yes.

Q. All right. Now then, the Stephens-Pohlemann well is located on a contour between 4600 and 4500 feet, is that correct?

A. On the base of the sand cap, yes.

Q. Which is approximately 4550 feet below sea level, the base of the sand at that point?

A. Minus 4555.

Q. Yes. Now then, you say in making your contours that you can contour, we will say, and you got in your contour 2 and Pohlemann No. 1 well, the base of the Medrano sand and that point is 4555 feet below sea level, and you are drawing your 4600 foot contour line. Now, from what point would you go to from the Pohlemann No. 1 in drawing your contour toward Beemer No. 1 to ultimately determine the contour that would locate the bottom of the sand in Beemer No. 1? Which direction would you go from Pohlemann No. 1 to where and why?

A. We would go to the southeast with that 4600 foot contour to the known control.

Q. And what is the known control toward the southeast?

[fol. 459] A. Gulf No. 1 and 4 Sherritt.

Q. And Gulf No. 4 is located west of the Sherritt fault, is it not?

A. That is right.

Q. And the Gulf No. 1 is located west of the Sherritt fault, is it not?

A. That is right.

Q. But the Sherritt No. 3 is located east of the Sherritt fault, is it not?

A. That is right.

Q. Now then, the Sherritt No. 4 is located on the contour line of about 4720, is it not?

A. Approximately that, yes, sir.

Q. Tell the Commission how you could tell to draw your 4600 foot line the number of the fractional number of inches that you did from the No. 4 Sherritt well? You have about 120 feet difference there in dip.

A. Well, you could even use more wells for control.

Q. Well, did you?

A. Sure.

Q. Yes.

A. We used the whole structural picture in that area.

Q. Tell what other wells you used to tell where you would draw your line then in relation to this No. 4 Sherritt well? That is the next one you passed.

[fol. 460] A. You go from the known to the unknown, or from the largest bunch of facts you have concentrated into the weaker points of control. For instance, you would probably start in contouring that area with the Stephens, Inc. No. 3 Wilhite; Stephens Petroleum Company No. 1 Samwil, Gulf No. 1 Pell, Stephens No. 1 Pohlemann, Gulf No. 1 and 2 Sherritt, to get the pattern and your rate of dip.

Q. In other words, you would begin at the top?

A. No; not necessarily whether you begin at the top. It is where your concentration of control is.

Q. Where is the concentration of control in this area?

A. I have just outlined it.

Q. You have just outlined it, and what 100 foot control is that?

A. Is what?

Q. That line, the first line of control; the first line that your committee put on that map.

A. I would not have any idea about that. We generall start with one line of control and carry it on through. What you would do, you would use your minus 3873 on the Stephens No. 3 well, 4212 on the No. 1 Samwil, 4220 on the Gulf-Pell, and various wells in triangular shape with the Pohlemann down to the south, you would probably scale those controls in between those wells trying to put each line where the base of the sand was on the even 100 foot mark.

[fol. 461] Q. Is that the way your committee did that?

A. Some measuring was done and calibration, but it is not always the case to do it in calibration, because there

are as many chances to vary in that as there is in visual observation.

Q. I say, is that the way your committee did it?

A. That is the substance of the way all contouring is done. I don't remember the actual detail which line was put on first.

Q. You don't remember which line went on first?

A. No, sir.

Q. But whichever line did go on first, you had to estimate from the known information you did have where the unknown was?

A. That is always true.

Q. And that is what you did do?

A. That is what we did do.

Q. Whatever contour line you drew on there, you estimated from the known information where it ought to be, is that correct.

A. That is right.

Q. Now then, there are 17 contour lines in what has been marked as segment A. Now, was each one of those contour lines placed on there by inferring its location from known points which you have outlined and numbered on this map? Is that right?

A. Do you want to use this map, or the other one?

Q. No; the one you are looking at.

A. The contour points are not numbered on this map. I thought you were talking about the one we did all of the [fol. 462] numbering on yesterday.

Q. They are all the same contours to represent different things, is that correct?

A. That is right, yes.

Q. That is right; that you use known points to determine the unknown depths indicated by each one of these lines in this segment A? That is right, isn't it?

A. That is right.

Q. And segment A is the area that lies west of the Sherritt fault?

A. That is right.

Q. Now then, after you drew your first contour lines, or began it—began to draw it——

A. We usually carry several of them at a time.

Q. I know, but when you got your several contour lines fixed, which you determined from the first three or four known points, you had to then use those contour lines in determining the location of the other contour lines, did you not?

A. That is right, yes.

Q. That is correct. Then as you got eight or ten contour lines on there you used all or a part of those contour lines, together with other known points that you might have in determining the location of the balance of the contour lines, did you not?

A. That is correct.

Q. That is correct. Therefore, in determining the depth [fol. 463] of the bottom of the sand in the Beemer No. 1 you have to determine several contour lines first, and then from one or two known sources, that is correct, isn't it, you did determine those—is that correct?

A. Several sources I would say.

Q. Several?

A. Yes.

Q. Several known sources?

A. You said "one" I thought.

Q. And when you did determine those few first contour lines from those several known sources you had established some unknown information that is represented by those contour lines, hadn't you?

A. We had established a reasonable expectation of what should be there.

Q. Well, that was unknown, though, before you had established your contour lines, wasn't it? Isn't that your testimony?

A. It was not absolutely unknown. It was more nearly established by contours.

Q. Well, it was established by contour lines, isn't that correct?

A. That is correct.

Q. Then you used those contour lines you had so established, together with other known information which you had, that is correct, is it not?

[fol. 464] A. That is right.

Q. To establish then the additional contour lines, and so on, which finally established the depth of the bottom of the sand on the Beemer No. 1 well? That is right, isn't it?

A. That is correct.

Q. That is the system of contours, isn't it?

A. That is right.

Q. And that is the way you contour?

A. That is correct.

Q. And that is the way the bottom of the sand was contoured, is that correct, at the Beemer No. 1?

A. Yes, sir.

Q. Well, that is the way the bottom of the entire Medrano section was—the entire Medrano sand was contoured, wasn't it, by that method?

A. That is right, other than the fact there were some places where there was a concentration of control in which the element of establishing, as you have drawn it, was not nearly so remote, or anything like that.

Q. In some places your known facts were more than they were at others?

A. That is right.

Q. Now then, you used the same system of contouring the top of the Medrano sand, didn't you?

A. That is right.

[fol. 465] Q. Now then, when you came to contouring the thickness of the Medrano oil sand you again used your contour map, did you not?

A. That is right.

Q. And you did not have the known facts you had as to the depth of the top of the sand and the depth of the bottom of the sand, in certain points we call control points, and also you had then to develop those control points in your lines of control which you call contour lines, isn't that correct?

A. That is right.

Q. And then you took these contour or control points which you had developed, and you took those for known information, that is correct, is it not, and you then acquired in the same manner the thickness of the sand area all over, didn't you?

A. That is right.

Q. Now then, turn to your isopachous map of the oil sand and refer to the Margaret No. 1 well—the Margaret-Phillips No. 1, and also the Sterba-Gulf-Palmer No. 4, and to the Stephens Petroleum Company No. 1, Pierson, and to the Hartshorne-Phillips No. 2, and the Hartshorne-Phillips No. 1, and the Amerada-Hartshorne No. 1, and state whether or not those wells were principally wells used in establishing the contour line on your map which is No. 125, and is located in section 35 and section 2 on the map?

A. They were.

Q. Now, tell the Commission how you determined that [fol. 466] this 125 foot line should be the fractional part of an inch that it lies from the No. 1 Phillips-Margaret which you have previously established as being marked at a point at which the sand was 122 feet thick?

A. I stated before, I don't know whether yesterday, the day before or a month ago when I was up here on the same problem, you can control anything that has numbers, the more numbers you have, the more points of control you have and more complete your contours, the more different looking kind of maps you have. These contours are based on the best judgment of the entire committee.

Q. What factors did you use, now, in influencing your judgment to determine that this 125 foot control line should be the fractional part of an inch that it is from the number 1 Phillips-Margaret well?

A. That would be quite difficult to explain why.

Q. Can you explain it to the Commission?

A. Other than just the previous statement I made; it is virtually a matter of opinion and to the best judgment of the one making the map and doing the contouring, without any certain rules one has to follow—in other words, you have got to have—you should not have—not supposed to have 150 contours going between two points, or 175 to 200.

Q. This 125 foot contour tells you or anybody else that looks at this map intelligently that the Medrano sand underlying that line is 125 feet thick everywhere, that is, the oil [fol. 467] sand, is that right?

A. That was the intention of the map, yes.

Q. Well, that is your testimony here before the Commission, isn't it?

A. That is right.

Q. It was your opinion that the Medrano sand is 125 feet thick in the oil zone under that 125 contour line?

A. That is right.

Q. Now then, you and the committee used your best judgment in fixing the location of that line the fractional part of an inch that it is from the Margaret-Phillips No. 1, is that correct?

A. That is right.

Q. Can you tell this Commission why you fixed it at that particular distance, say, 1/8 or 1/16 of an inch, or whatever that is, instead of making it twice that much?

A. That would be rather difficult to say. I don't believe I could.

Q. You could not tell that?

A. No.

Q. Why didn't you fix it at 1/4 of an inch from the well, then, instead of this 1/8 or 1/16 or whatever that is? Why didn't you move it out twice as far? Can you tell them that?

A. I cannot.

Q. Well, you are representing to the Commission that this contour you have down here is fairly an exact science, some-

[fol. 468] thing you can base a straight border on, aren't you?

A. I have explained how contouring is done, and men differing in opinion can make different maps with a given set of points on a map.

Q. I understand. Is that your answer?

A. That is my answer.

Q. To my question?

A. That is my answer.

Q. Do you have any idea about how much error there could be in making a map of this kind in the Medrano sand, and how much error there would possibly be in this map you are looking at? Do you have any opinion about that?

A. There can be errors in any kind of maps in which your contours are drawn, unless you would happen to be out on the ground, and then even an inch contour of the topography of the ground can be in error as to complete exactness.

Q. I would like to call your attention to the point at which this 125 foot contour line passes near the Stephens Petroleum Company-Pierson No. 1 well, which is a control point, and which you have established by a method you have already testified about, that the sand is 120 feet thick there. Can you tell why you drew that contour line as close or as far away from that point as you did?

A. No.

Q. Can you tell the Commission the known factors you [fol. 469] used in putting that line where you did?

A. The wells were enumerated to start with, is what we attempted to infer, and this line on here was our conclusion.

Q. Now, the reason you didn't put it on the other side, that is, over on the east side of the Pierson No. 1 well, was that you knew the sand was getting thinner over there, didn't you?

A. That is right.

Q. You knew that, didn't you? What?

A. Yes; it is getting thinner over there.

Q. I say, you knew that from well control?

A. Yes.

Q. You knew it from other wells that had been drilled in the field?

A. That is right.

Q. Because you knew that the farther northeast you went in that sector the closer you approached the gas zone and the thinner your oil sand became? That is right, isn't it?

A. That is right.

Q. So, that is the reason you put it on the west side of the Pierson No. 1, that is right, isn't it?

A. Yes, sir.

Q. Now then, I call your attention to the Phillips-Hartshorne No. 2, and I will ask you to state if by the methods which you heretofore testified about that you and your committee did not determine and assume, that is, I will say, [fol. 470] worked out from the known facts that you had that the oil sand under the Phillips No. 2 was 141 feet thick? That is correct, isn't it, it gave it a thickness of 141 feet?

A. Yes.

Q. Now then, is that the reason that you caused this 125 foot contour line, after passing the Stephens-Pierson No. 1

well, to veer off to the east, because of the 140 feet of sand that lay to the south there in the No. 2 Hartshorne well?

A. You say as the line went north it veered to the east?

A. No; the line was coming from the north to the south past the Pierson No. 1 well. Let us have it coming that way. To get it over here, then it veered to the east on account of the No. 1 Hartshorne, that is correct, isn't it, and the reason it veered to the east was because there is 141 feet of sand in the Phillips-Hartshorne, and this is a 125 foot line, that is right, isn't it?

A. Yes.

Q. The No. 1 Phillips-Hartshorne you determined had exactly 125 feet of sand in it, did you not?

A. That is right.

Q. Now, will you state to the Commission how you determined the location of that 125 foot line, as between the Edwards No. 2 well—Magnolia-Edwards No. 2, which your map shows at 83 feet of sand, and the Amerada-Hartshorne No. 1, which your map shows had 132 feet of sand? Can you tell the Commission how you determined there was a place [fol. 471] in between those two wells that 125 foot line should go?

A. To my best judgment it was placed there without any known facts, other than the Magnolia No. 2 Edwards and Amerada No. 1 Hartshorne.

Q. Did you take the ruler and measure between those two wells to determine the distance between them on the map, and then take the proportionate distance between them according to the thickness of the sand under each well? Did you do that?

A. Not to my remembrance we did, no, sir.

Q. Why wouldn't that be a good way to do it?

A. It would not be a bad idea in some cases.

Q. Is there any way you could tell how much that sand would thicken up or thin out between those two wells without drilling a hole down there to find out?

A. Not for sure, no.

Q. Now, those two wells are offset wells, aren't they?

A. What two wells?

Q. The Edwards No. 2 and the Amerada Hartshorne No. 1.

A. They are diagonal offsets.

Q. They are diagonal offsets, and each one is located in approximately diagonal offset 10 acres?

A. That is right.

Q. Now, just from one diagonal offset to another it would be some 800 feet, I should judge. Is that right?

A. A little farther than that.

[fol. 472] Q. 900 feet, there is a difference in thickness of sand of almost 50 feet. That is right, isn't it?

A. That is right, and the contours are the indications of what the committee thought the rate of thinning was between them.

Q. If you would move that contour line a few feet either way it would make a very material difference in what these three adjoining wells, the Phillips-Hartshorne, the Amerada-Hartshorne and the Amerada-Edwards would obtain in sand body, would it not?

A. That was not considered when the contours were put on the map.

Q. It may not have been considered, but it is a fact.

A. The answer to that question is that it was fixed. I don't know how much it would affect it.

Q. It is a matter of mathematics; it can be figured, can't it?

A. I am not sure I could.

Q. You know it could be by a mathematician?

A. Yes.

Q. It is a matter that can be computed?

A. That is right.

Q. And you know it would be a matter of some magnitude for you to move that line just a few feet?

A. I would not know what the magnitude would be.

Q. I say, it would be a matter of some magnitude?

A. Some magnitude, yes.

[fol. 473] Mr. Bond: I think that is all I have, Mr. Montgomery, if you want to be seated.

Mr. Williams: Mr. Counsel, if you have reached a breaking point in your chain of thought, I think it would be well to give these reporters a brief rest.

Chairman Bond: We will take a recess.

(After short recess, the proceedings were resumed as follows:)

By Mr. Bond:

Q. I call your attention again to your Exhibit No. 57, which is the isopachous map to demonstrate the thickness of the Medrano oil sand, and call your attention again to the 125 contour line traveling through the Phillips-Margaret lease and the corner of the Palmer-Gulf-Sterba lease, the Stephens Petroleum-Pierson lease, and the Cement-Henley lease, and through the Phillips-Hartshorne lease in sections 2 and 35 on your map, and ask you to state to the Commission why you caused this contour line to run so far north forming a large loop to the north and between the extensions that were run north and south from the Stephens No. 1 Pierson well and the Sterba No. 4 Gulf well, making a sort of a loop segment there to the north of those two wells and extending up into the Cement-Henley lease? Can you explain why you caused that segment to extend up into the Cement-Henley lease so far?

A. From the well control we had, together with our other information, that to our best judgment was where that line should go.

[fol. 474] Q. Now, why, in your judgment, should not the next contour line of 100 feet also make a loop to the north in accordance with the loop formed by the 125 foot contour line?

A. Because when we reached the oil-gas contact, that in itself was a controlling factor how far northeast that 100 foot contour should go.

Q. In other words, your control point of the Cement-Henley-Magnolia No. 5 well disclosed to you that the thickness of the oil sand at that point was only 54 feet, is that correct?

A. That is right.

Q. Now, if you draw a straight line from the Magnolia-Cement-Henley No. 5 to the Palmer-Gulf-Sterba No. 4, which is also a control point, is it not?

A. It is.

Q. And then find a point on that line which is a proportionate distance between the two points as the thickness

of the sand at the two points, why wouldn't that be a good way to contour, as a matter of geological opinion?

A. If you only had those two points to control your contouring of the thickness, that would probably be as good a way as any.

Q. What other point entered into it to change it?

A. The fact that the way these maps were made was that the top—the map on the top of the sand and the map on the base of the sand were superimposed over each other, and [fol. 475] points of control from the wells, by superimposing those maps over each other over a shadow board, many additional points could be arrived at as to the local thickness. Those were used in the preparation of this map, but those points are not shown on a map such as this.

Q. Those points were not actual control points, such as wells, but were other contours that were drawn on the surface, that is, that were drawn on top of the sand, that is, contouring the top of the sand?

A. Contouring on the top and the base, yes.

Q. So the other factors that entered into this matter, which drew contour lines to the north were not actual control points, but were other contour lines on the contour of the surface—I mean contour of the top of the sand?

A. Top and the base, yes.

Q. Yes. Those control points, after you draw them on your map you consider as known data, and before you draw them they are considered as unknown, that is correct, isn't it?

A. They are not considered known data. They are considered points to make the finished product.

Q. They are considered as actual facts, so far as you are concerned in making your final product?

A. No; not as actual facts. Any contours, and I believe I have left the impression, at least I have attempted to, that any contour done by different people will have a different appearance to it and will not be exactly in agreement.

Q. And the reason that this contour line 125, showing [fol. 476] 125 feet thickness is drawn to the north of this large arc is because of the superimposing on the contour of the bottom of the sand the contour map of the top of the sand, that is right, isn't it?

A. That is right.

Q. And the mene between the contour lines on the bottom of the sand and the contour lines on the top of the sand were taken to determine this arc, is that right?

A. They were taken to help determine it. I don't remember the exact picture they gave at that time, but in the judgment of the committee that appeared to be the most logical way to put it.

Q. And if you did not superimpose that map on the map of the contour of the top of the sand on the map contours of the bottom of the sand and you would disregard that, then you would probably cut down the distance north which this arc or circle of the 125 foot contour makes, is that right?

A. It is possible one might have. I don't remember the exact detail.

Q. A reasonable man, and a reasonable geologist, making this contour could vary that with as much correctness probably as is shown on this map and cut that arc down quite a bit and still say it should be a correct map?

A. I don't think so.

Q. You don't think so, but other reasonable men might differ with you on that, might they not?

A. Other reasonable geolists—there were eight mem- [fol. 477] bers of this committee that decided that that looked reasonable to them.

Q. But even the members of the committee differed among themselves at times, did they not, until they finally reached an agreement?

A. I never heard of eight geolists being together that they did not have some differences.

Q. That is what I say, you on the committee did have some differences of opinion, being reasonable men?

A. Yes.

Q. And you did differ on the location of many of these contour lines, did you not?

A. Surprisingly little, because each one of us knew the variations that could be made in contours.

Q. Now, they differed some?

A. No; there was not any difference that amounted to anything, because these contours—

Q. Do you mean to tell—

Mr. Williams: Let him answer the question.

A. —were all made irrespective of lease lines. These contours were put on there purely from a structural standpoint.

By Mr. Bond:

Q. And from a structural standpoint they could vary a great deal, could they not?

A. Not a great deal.

Q. Now, Mr. Montgomery, let us get back to the Beemer [fol. 478] No. 1. Would you take your chair again, please, sir, if you are tired standing up, and look at the core analysis on the Beemer No. 1 and state how many feet of core was analyzed. About 90 feet, wasn't it?

A. That is correct.

Q. What laboratory analyzed the cores?

A. The Core Laboratories, Incorporated, of Dallas, Texas.

Q. State whether or not the analyses showed any part of the sand body as being permeability of zero.

A. There is a part of the sand showed zero permeability.

Q. Will you tell the Commission what points of the analyses, giving the depth, which shows zero permeability?

A. A plug at 6067.5 shows zero-zero permeability;
Another one at 6068.5 shows zero-zero permeability;
At 6069.3 shows zero-zero permeability;
At 6071.5 shows zero-zero permeability;
At 6072.5 shows zero-zero permeability;
At 6073.5 shows zero-zero permeability;
At 6074.5 shows zero-zero permeability;
At 6075.5 shows zero-zero permeability;
At 6086.5 shows zero-zero permeability;
At 6102.5 shows zero-zero permeability;
At 6144.5 shows zero-zero permeability;
That was all.

Q. How many feet of sand containing the permeability [fol. 479] of zero-zero would those figures indicate in that body of sand?

A. Eleven feet.

Q. Eleven feet of sand?

A. Yes.

Q. I call your attention to the control point which you have marked No. 49 on your map, being the Gulf-Sherratt No. 1, and ask you to state to the Commission how many feet of core was analyzed in that well.

A. This is a graph of their core analysis.

Q. Will you state the number of feet of core analysis.

A. It only shows exactly the number of feet analyzed, although it will show approximately the total feet of all sections in which some analysis was made.

Q. I see. How many feet of section does it show analysis was made ?

A. From 5778 to 5975, which was below the Medrano zone.

Q. Now, was that sufficient core to determine the thickness of the Medrano oil sand at that point?

A. Not in exactness, no.

Q. Was there an electric log used by the committee in determining top and bottom of the sand at that point?

A. It was used as an aid, yes, sir.

Q. Do you have the electric log?

A. No; I don't, but I maybe could borrow one. 5776 of hole depth.

[fol. 480] Q. 4776 hole depth?

A. Yes, sir.

Q. Do you mean by that the electric log shows the bottom of the oil sand to be at 5776 feet?

A. You said where we determined the top, didn't you? Isn't that the question?

Q. Oh, is that the top?

A. Yes.

Q. That is the top of the sand?

A. That is right.

Q. What does the electric log show as to the bottom of the sand?

A. The electric log, as determined by the Schlumberger employees would indicate it being 5950. The committee of geologists used the point of 5955 as the basis.

Q. What did the committee of geologists use as the top?

A. 5776.

Q. Why did the committee place the bottom of the sand five feet higher than shown on the electric log?

A. Because of the assistance we had, some samples and drilling time.

Q. Did you arrive at that conclusion from any information you gleaned from the core analysis?

A. We used it in conjunction with our samples and drilling time, yes.

[fol. 481] Q. Does the core analysis show the bottom of the sand, of the oil bearing sand?

A. Not in exactness, no.

Q. What is the lowest point of analysis showing oil saturation and permeability?

A. At about 5946.

Q. How did you happen to take off that last foot?

A. Because of the detailed electric log, which we thought was probably more accurate than the depth at which cores were obtained.

Q. Now, what is the total thickness of the sand at that point, as shown by your map?

A. 169 feet.

Q. Will you refer to your core analysis and advise the Commission whether or not the analysis shows any of the sand with a permeability less than 1 or zero?

A. On these graphs these depths will not be exact. They will be approximate only, but they should be within a foot or so of accurate. 5786 to 5787.5.

Q. What was the permeability?

A. It shows 1.

Q. All right.

A. One point at 5821.

Q. What is the permeability zero?

A. 5822.2 zero, with a point in between those having 105 millidarcys.

[fol. 482] Q. The point in between 5821 and 5822.5?

A. Yes.

Q. What point is it? Oh, you can't tell on the graph?

A. Yes; I can tell on the graph here.

Q. Yes.

A. It would be approximately half way between.

Q. How many millidarcys did it have?

A. 105. Did I give the one——

Q. The last one you gave was 5822.5, zero.

A. 5823.

Q. What was the permeability?

A. Zero; 5836, zero; 5837.5, zero; 5880, zero; 5882, zero; 5889, zero; 5904, zero; 5937, zero, down to 5940, which is zero. Those are the ones that were included in the Medrano sand section.

Q. How many feet of sand does the analysis refer to contained a permeability of less than 1 or zero?

A. Between 11 and 12 feet.

Q. Now, what is the highest permeability shown in that core analysis?

A. 2590 millidarcys.

Q. What is the approximate average millidarcys in that section analysis?

By Mr. Williams:

Q. Are you reading the right figures?

A. I am sorry, that last statement I made there in regard to millidarcys was in error. Each one of these companies in [fol. 483] the organization making up these things, use different types of symbols and you have to look at them a few minutes to know what is what, and then sometimes you don't know. 514 is actually the highest millidarcys reported in the cores.

By Mr. Bond:

Q. What is the average?

Mr. Lowe: Someone said it was 575. He is looking it up.

A. The scale is wrong. There is 575, but it goes out no farther than the scale, which indicates 514. 575, that is correct.

By Mr. Bond:

Q. Now then, that is the highest millidarcys—I mean that is the highest permeability of any analyzed portion of that core?

A. 575 millidarcys.

Q. Is that right?

A. That is right.

Q. About what is the average permeability of the core in millidarcys?

A. Oh, just an approximate guess would probably be around, somewhere around between 100 and 150.

Q. Now then, Mr. Montgomery, will you refer to your control point No. 74, as marked on your map, which is the Gulf-Pell well No. 1, and advise the Commission the number of feet of core analyzed by your core analysis on that well.

A. From the record it shows cores were analyzed through the section from 5622.5 to 5678, of which a part was below the Medrano zone.

[fol. 484] Q. Would that be an analysis of sufficient core to determine the thickness of the Medrano sand at that point?

A. Not in exactness, no.

Q. Was an electric log used by the committee in determining the top and bottom of the sand?

A. It was used as an aid, yes.

Q. What does the electric log show to be the depth of the sand?

A. It was marked by Schlumberger, those who conducted the survey, at 5639, with which the geologists agreed.

Q. What does it show the bottom of the sand?

A. Schlumberger used 5667, in which the geologists also agreed.

Q. What do you show on your map was the thickness of the sand at that point?

A. 28 feet.

Q. Did you say the bottom of the sand was 5667?

A. That is right.

Q. And you said the top of the sand was 5639?

A. That is right.

Q. And the thickness of the sand was 38 feet?

A. 28 feet.

Q. 28 feet. All right. Now then, does your core analysis disclose whether or not any of this sand contained a permeability of zero or not more than 1?

[fol. 485] A. Yes, it does.

Q. Will you tell the Commission the depth at which such analysis was made, and the result thereof.

A. 5654.5, through the section down to 5658.5.

Q. What was the permeability?

A. Zero—between zero and .5, with the exception of one small streak, or at least where the plug was pulled at 5655,

which showed .4 millidarcys; 5661 was zero; 5661.5 was .5 of 1 millidarcy; 5665, was .6 millidarcy. It was then zero millidarcy down to 5671. At 5673, was .5 of 1 millidarcy; 5675, was .1 of 1 millidarcy; 5675.5 was .8 of 1 millidarcy, which is below the Medrano zone. I have been reading here on the side track of where the base of the sand was, I am sorry.

Q. 5669?

A. 5667.

Q. Yes; 5667.

A. Sometimes it is rather difficult to state in exactness, because of the measurements you can be off three or four or five feet without any difficulty at all.

Q. Now, Mr. Montgomery, what does the electric log show to be the oil saturation from 5673 to 5675?

A. The electric log?

Q. No; the core analysis.

A. State that question again, will you, please?

Q. What does the core analysis show the oil saturation to [fol. 486] be from 5673 to 5675?

A. Quite low.

Q. What percentage? Is that the way it is written, in per cent?

A. No; it is not written on this one. They have tried to calculate it out into barrels per acre foot.

Q. What does it show on that basis, barrels per acre foot?

A. From 5665 to about 5678 it ranges from zero barrels per acre foot to as high as 80 barrels per acre foot.

Q. Is the segment lying between 5671 and 5675 so denoted on the analysis so you could give a separate statement as to the oil content of the sand?

A. Do you mean at each point they have tested?

Q. Well, take at any point, or at all of the points, from 5671 to 5675.5; can you give the oil saturation of that particular segment of the sand?

A. I will see if we can. 5671 to 5675.5?

Q. Yes.

A. The first one is 80.

Q. 80 barrels per acre?

A. Yes, sir.

Q. Per acre foot?

A. Per acre foot, yes.

Q. What section does that cover; 5671 feet to what depth?

A. That is only the test of the plug they pulled.

[fol. 487] Q. At what depth?

A. The one you just mentioned.

Q. 5671, all right.

A. 5671 is right.

Q. Is there a showing at the depth of 5673?

A. Well, approximately that. It is slightly above that point, yes, as they have plotted it here.

Q. What is that?

A. 49 barrels per acre foot.

Q. What does it show at 5675?

A. They don't have one at 5675. They have one at 5674, which showed 34 barrels per acre foot.

Q. I see. Did they have one below that?

A. At 5675.5.

Q. What did that show?

A. They have one number on top of the other, but I believe the best one they must have intended. It looks like zero on top of 3, so it would be 40 barrels per acre foot.

Q. Is there any oil saturation shown below, that depth down to 5678?

A. Yes; there is one at a point just immediately under the 40 barrels per acre foot. Incidentally, that 40 barrels per acre foot was at 5675.5.

Q. Yes.

A. And the other one apparently was taken just a very [fol. 488] few inches under it, and the typewritten figure is rather hard to read, but I believe it is 73 barrels per acre foot.

Q. And that is the last analysis on oil saturation of a core, is that correct?

A. They had one at the bottom of their coring, which was at about 5678, and it was zero barrels per acre foot.

Q. Now, Mr. Montgomery, it is a fact, then, that there was some sand in the Medrano oil zone which did not contain oil, and which was not included in the sand thickness, is that correct?

A. No.

Q. Well, do you say, then that the core analysis on this Gulf-Pell well is in error?

A. No; except for the fact that the lower part of that core as analyzed is sandy shale below the Medrano zone, below the sand section.

Q. I see; you did not include the sandy shale in the sand body?

A. In that part of the section, no, sir.

Q. Did you in any part of the Medrano oil sand area, did you include any sandy shale in your sand thickness map?

A. Not that which came below the base of the sand itself. It is probable that there was some in the total net sand as we used that was too obscure to determine its exact thickness and it was included, but this is definitey below the sand zone, and it was not included.

[fol. 489] Q. Well, I will ask you if there might not be some disagreement between reasonable geologists as to what is the bottom of the sand zone in this particular well.

A. That is probably true, but there were eight on this committee, and they were familiar—probably you would have a little trouble getting eight other men that were as familiar with the area, and that was their opinion, and I believe we are willing to stand on it.

Q. Was it the intention and policy of the committee to include every bit of sand which contained any oil whatsoever, no matter how small?

A. No; not when it came through——

Q. And that lay between the top and bottom of the Medrano oil sand?

A. We did include that, but we did not include that which came either on top of the sand zone or below the base of it.

Q. Now, at the point of contact between the oil sand and the gas sand there is what you would call a feathered edge, is there not?

A. I don't know whether it has resemblance to a feather or anything like that, but it is an irregular line.

Q. But having an irregular line in which there would be a large measure of guess to determine how much of the sand in that particular area was gas bearing sand and how much was oil bearing sand?

[fol. 490] A. That might be more or less of a fact if one were to attempt to determine that zone right at this date, but the date as originally before disturbance by producing,

it could be determined with a great degree of accuracy.

Q. Now, do you mean to tell the Commission that you can, by investigation, after a field has been in production for seven or eight years, determine the exact line of division between the oil bearing strata and the gas bearing strata in the sand as it was originally in place before any wells were drilled?

A. Beyond a reasonable doubt, that can be done, yes, sir.

Q. How can you do that? Will you tell the Commission what methods you would use in making that determination?

A. By physical test of the well.

Q. Physical test of the wells that have drilled into the gas and then on into the oil sand, is that correct?

A. That is correct, and by the benefit of core analyses checked by your physical tests of the well.

Q. Now then, you can determine those matters by your points of control, that is correct, isn't it?

A. That is right, yes.

Q. And at the points where you have a well which has actually drilled through the gas sand and into the oil sand, that is correct, isn't it?

A. That is right.

[fol. 491] Q. And that is the only way in which you can tell accurately and exactly the footage depth of the contact between the gas and oil sand?

A. That is the way to tell with more degree of certainty as to the exact foot.

Q. Yes. You can tell right down to the inch on that?

A. No; hardly that close. That is impractical, probably.

Q. To the foot, can't you?

A. That in some instances may be a little close too.

Q. How far would you say?

A. I would say within 5 feet.

Q. Within 5 feet?

A. Yes.

Q. And you do that by core analysis, visual examination of the core and physical testing of the well, physical tests of the well, examination of cuttings and samples, but when

you get away from those control points, you have to depend entirely then on your contour signs?

A. That together with the fact that we have several other points over the field which made only gas at the total depth which was above that point you had determined by that known control in the well formation. Other wells have produced only oil from the below sea depth above the point you have determined from the well formation. Consequently you know within reason it has to be close to that point you have to determine by that well in which you obtain the degree of fair exactness in the footage.

[fol. 492] Q. And in those cases you are required, then, to estimate?

A. Hardly that, because you have already determined it.

Q. I say, you are required to estimate from the determined and known facts which you have from your control points, that is correct, isn't it?

A. No; I would not consider it hardly an estimate then.

Q. Now, isn't it a fact that you, to take a concrete example, take the Magnolia-Cement-Hanley No. 5 well, which was drilled through the gas sand and into the oil sand—that is correct, isn't it?

A. Yes.

Q. Now, that well, in your opinion, disclosed a section of 54 feet of gas sand, did it not—I mean of oil sand, that is correct, isn't it?

A. That is correct.

Q. And the well had 61 feet, plus, of gas sand, did it not?

A. That is right.

Q. Now, at the point of contact between the oil sand and the gas sand, as disclosed by the map which you introduced in evidence showing the contact of the sands, and which is represented by the red line drawn diagonally across your Exhibit No. 24.

A. I don't believe I profess to making that map.

Q. It is not one of your maps?

A. That is one of the exhibits from the geological committee. I did not make the map.

[fol. 493] Q. You are familiar with that map?

A. I have seen several of them.

Q. You are familiar with the cross section line I referred to crossing it?

A. I would rather see one to know for sure what I am talking about here.

Q. I hand you copy of Exhibit 24, and I call your attention to the broken red line drawn horizontally across it, and I will ask you now if you are familiar with the cross sectional sand map that was drawn of the sand at the point that the red line crosses it?

A. Yes; I have seen it.

Q. I don't remember what exhibit it was, but it has been introduced in evidence, and I will hand you what is the copy of the exhibit that you introduced showing the cross section of the oil, gas and water sands along that red line on Exhibit 24. Now, you are familiar with that map, are you not?

A. Yes; I have seen it.

Q. Now, I call your attention to the fact that the map shows that the gas sand overlaps the oil sand, and the oil sand underlies the gas sand in a considerable area of contact, isn't that correct?

A. It is there represented on that cross section, yes.

Q. Is that not the fact?

A. In the field itself, yes.

Q. And that cross section, I believe the testimony in this case as put on by your company, shows that those sands do contact one another much in the same manner as shown [fol. 494] by that map or plat.

A. This cross section was——

Q. Is that correct?

A. —was a more idealistic cross section as of the pool before disturbance by producing.

Q. I see. Now, that is the line that you have drawn on your contour map of the top and contour map of the bottom of the Medrano sand, isn't it? That indicates the gas-oil demarkation line before the field was ever drilled, that is right, isn't it?

A. The preparation of this cross section, as I understand it, was taken literally from Exhibits 54, 55, 56 and 57.

Q. I am talking now about the gas-oil line now you show on your contour maps of the top and bottom.

A. That is right.

Q. It is a line that represents the gas-oil contact before any well was drilled in that field, doesn't it?

A. That is right.

Q. That was your intention when you made the map?

A. That is correct.

Q. Now then, in determining that contact you used as control points the Magnolia-Cement-Henley No. 5 as one of them?

A. In determining the gas-oil contact, yes, sir.

Q. And the Anderson-Prichard-Hayes No. 1 is another, is it not?

[fol. 495] A. It is a check, yes, sir.

Q. Well, isn't it a control point?

A. It was not cored like the No. 5 Henley?

Q. Well, it is not as good a control point as the No. 5 Henley?

A. That is the reason I said we used it as a check.

Q. Now then, you had to estimate the distance north of the No. 5 Henley at which the gas ceased contact with the oil sand, did you not, in making this map?

A. It was estimated by means of contour, yes, sir.

Q. It was estimated by the science of your contour, wasn't it?

A. That is correct.

Q. And the point at which the gas sand ceased to overlie the oil sand south of the Magnolia-Cement-Henley No. 5, was also determined by the same method, was it not?

A. That is right.

Q. And the width of the area and its overlay by both oil and gas sands is determined by estimate, is it not, after you use those other two points, which you most certainly did?

A. Yes.

Q. And it is determined by your contour estimating science?

A. That is correct.

Q. Now then, Mr. Montgomery, will you refer to the core analysis on your control point No. 29, which is the Magnolia-Medrano well No. 6, and state to the Commission [fol. 496] how many feet of core were analyzed in that analysis,

A. No. 6 Medrano was the one asked for?

Q. Yes; Magnolia.

A. Apparently there were only two samples ever examined, one of them was at 4951 and the other one at 4961.

Q. How many feet of core would you say was recovered, that is, analyzed, approximately?

A. It says, "Note: Where samples were insufficient to allow of getting of permeable sample, note has been made as to which samples they resembled, rather than an attempt at estimation."

Q. Could you state how many feet of core was analyzed?

A. It would indicate a representative zone from 4950 to 4962.

Q. That would be about 12 feet, wouldn't it?

A. That is so stated on the analysis report.

Q. What is the thickness of the sand in that well as shown by your isopachous map?

A. 62 feet.

Q. Does that core analysis cover a sufficient amount of core to determine the thickness of the sand or its gas content?

A. It is not.

Q. What other information was used to determine the thickness of the sand at that point?

A. Samples and electric log.

Q. Do you have the electric log that was used by the committee?

[fol. 497] A. Yes; I have borrowed one.

Q. At what depth does it show the top of the sand to be?

A. As it was called by the committee from the electric log, showed 4913.

Q. What was the bottom as shown by the electric log?

A. It was called by the committee at 4980.

Q. What does the electric log show the bottom to be?

A. That was where the committee called it from the electric log.

Q. Oh, I see. That was the interpretation placed on the electric log by the committee?

A. That is right.

Q. And that makes the top, then, at 4913, and the bottom at 4980, is that right?

A. That is right.

Q. That would make the sand thickness, then, 67 feet, would it not?

A. Yes; but there was five feet deducted from the gross because of a shale break.

Q. I see. Did the electric log show the shale break?

A. Yes.

Q. Did the core analysis that was taken show that area in the shale break core?

A. No; I don't believe the core analysis indicates that.

Q. Does the electric log disclose any other shale breaks, [fol. 498] or areas in which the sand did not contain gas?

A. I believe not.

Q. Did the cuttings and samples reflect the shale break as shown by the electric log?

A. The samples are rather difficult to dip from the rotary samples. The 65 feet of shale deducted was composed of two shale breaks, as indicated by the electric log. The samples in those from a rotary hole would hardly be in detail enough to call those breaks.

Q. Did you make any deductions for shale breaks in any other gas wells in the pool? That is the committee, of course.

A. I don't remember off hand whether we did or not. After all, that work was done approximately a year and a half ago, in the fall of 1945. I don't remember it that much in detail.

Q. Is a shale break in the Medrano gas sand an exception, or is it the general rule?

A. It is according to where you are in the field.

Q. Well, let us take the different segments as we have numbered them for the purpose of this hearing and say, first, segment A.

A. No; I don't believe any was deducted for shale in the gas zone in the area you have mentioned.

Q. Would you say then that segment A, which is the area west of the Sherritt fault, does not, as a general rule, contain shale breaks in the Medrano gas sand?

[fol. 499] A. Not in the sense that they are three or four feet in thickness. The Medrano sand locally in it will have thin, laminated shale streaks, which are more or less paper

thin, which is somewhat characteristic of the sand in some parts of the field.

Q. But these paper thin streaks are disregarded?

A. Yes, sir.

Q. And by that you mean as thin as a piece of paper?

A. As thin as a piece of paper, yes, sir.

Q. What do you say about segment B, on the shale breaks in the gas sand, is that the general rule in that sector, or is that an exception?

A. No; I wouldn't say it was an exception. Just at a glance I can see three or four wells we had some deducted, or more than three or four we had part of the zone deducted because of shale.

Q. Then you would say that shale break in the gas sand in section B would be more or less the general rule, or it is at least not unusual?

A. It is not unusual, but I still would not say it was the general rule, no.

Q. Section B is the area lying between the Sherritt fault and the Sterba fault, is it not?

A. That has been so designated, I believe.

Q. Now then, as to section C, lying between the Sterba fault and the Hartshorne fault, what about the shale breaks [fol. 500] there in the gas sand?

A. On brief examination of our data sheet, the only shale I notice being deducted out of the total gross zone is about four wells—about three wells, excuse me.

Q. Then you would say that shale breaks in the gas sand in Section B is a common occurrence?

A. No; I wouldn't say it is a common occurrence. It is not unusual.

Q. You have it in four wells—three wells?

A. That is from a brief examination, yes, sir, of these data sheets.

Q. Well, there are only three gas wells in that section, aren't there?

A. Six.

Q. Well, really just three.

A. In area D?

Q. No, area C.

Chairman Bond: Gentlemen, it is 4:30. Is this a good place where we can stop?

Mr. Bond: Yes; I think so.

Chairman Bond: You gentlemen can't finish this case this week. Do you want to have tomorrow too, or do you want to continue it to some date when you can finish?

Mr. Bond: It is immaterial to us. Whatever suits the Commission will be agreeable to us.

[fol. 501] Chairman Bond: Will you bring the docket, Mr. Secretary? If you gentlemen can agree on a date, it will probably take you some time. We have a congested docket. It cannot be finished this week, so if you can you might arrange to agree on a date.

Mr. Adams: If the Commission please, if we are not going on into it in the morning, I am afraid we might forget this, but there is a datum sheet that is supposed to be attached on the part of the geological committee's report to Exhibit 68. I wonder if we have a copy of that datum sheet that we could put on that exhibit? Oh, I see. We have it.

Chairman Bond: Do you care to offer it at this time, or to hold it?

Mr. Adams: We would like to offer it as a part of Exhibit 68.

Chairman Bond: Is it agreeable with counsel?

Mr. Williams: Yes.

Chairman Bond: You might offer it as a part of Exhibit 68.

Mr. Bond: What is that?

Mr. Adams: That is the thing he has been referring to all of the time.

Mr. Bond: As part of the witness' cross examination?

Mr. Adams: Yes. Also with respect to these letters from certain royalty owners which Mr. Green, I believe, introduced into the record Monday, all of those letters, with the exception of one, failed to state any description of the location of where the royalty is supposed to be owned, and I [fol. 502] know the Commission would like to have an expression from these people, but I do think the letters ought not to go in as exhibits unless the real property descriptions where the royalty is supposed to be owned is also reflected on the letters.

Mr. Green: They are merely offered for what they might be worth. It has been the practice to allow people to write letters, and if we receive the letters, we receive them.

Mr. Williams: I believe from our records we can supply that information.

Mr. Adams: We might jot down on each of the letters where that person is located.

Mr. Williams: We will endeavor to do that before the next hearing.

Chairman Bond: It is agreeable, if you gentlemen want to place the description of the royalty in the letters.

Mr. Bond: If the hearing is to be adjourned for some time, I believe that it might be advisable at this time to mark the map which is now on the blackboard, and which is a replica of Exhibit 54 as an exhibit.

Mr. Adams: Exhibit 54 or 56, now?

Mr. Bond: Let us see which one it is a replica of.

Mr. Adams: The top one is 54.

Mr. Bond: Exhibit 54 contains the numbers enumerating the control points and other data placed thereon by Mr. Montgomery in his cross examination, and we would like to [fols. 503-504] have the map marked as an exhibit and offer it in evidence as part of the cross examination of Mr. Montgomery.

Chairman Bond: Is there any objection?

Mr. Williams: No.

Chairman Bond: Let it be received.

Mr. Bond: Well, we will let the map with the numbers on it be marked Exhibit 54, and substitute that for Exhibit 54 heretofore offered.

Chairman Bond: Very well, let the record so show. Take the map down from the wall and give it to the reporter so the Commission will not lose possession.

(Witness excused.)

Chairman Bond: The hearing will be adjourned to May 13, and at that time hearings will be conducted through May 23, excluding Saturdays and Mondays, and it is hoped the case may be concluded in that time.

(Whereupon, at 4:30 o'clock p. m., February 27, 1947, the hearing was recessed until May 13, 1947.)

[fol. 505] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

ORDER CONTINUING CAUSE—Filed March 3, 1947

This cause came on for hearing before the Corporation Commission of Oklahoma on the 25th day of February, 1947, at 10 o'clock, a.m., in the Commission's Court Room, Capitol Office Building, Oklahoma City, Oklahoma; the Honorable Reford Bond, Chairman; Ray O. Weems, Vice-Chairman; and Ray C. Jones, Commissioner, sitting.

The case was heard on February 25th, 26th and 27th, and at the conclusion of the hearing on February 27th, it was agreed among the parties that the cause would be continued until May 13th, 1947, at 10 o'clock, a.m., and be heard on the dates of May 13th to May 23rd inclusive, except that no hearings would be held on Saturday, Sunday or Monday.

[fols. 506-507] Order

It is therefore ordered that this cause be and the same is hereby continued from February 27th to May 13th, 1947.

Done and performed this the 28th day of February, 1947.

Corporation Commission of Oklahoma, (S.) Reford Bond, Chairman; (S.) Ray O. Weems, Vice-Chairman; (S.) Ray C. Jones, Commissioner.

Attest: (S.) Tom McMurray, Secretary.

[Title omitted.]

[fol. 508] Before the Corporation Commission of the State of Oklahoma

Transcript of Hearing May 13, 1947

Chairman Bond: Gentlemen, are you ready to proceed.

Reford Bond, Jr.: At the close of the last hearing, at the last recess, I would say there was an exhibit from which the witness was testifying, Exhibit 54, which was handed to the Court Reporter and we would like to have that put on the board.

Whereupon, Mr. Montgomery was recalled to the stand. Witness examined by Reford Bond, Jr.

Q. To refresh your recollection and to get back to the part of your testimony, at which we were when the Commission recessed last, I will ask you if the clients had not offered the plan to the Commission, a part of which consisted in determining the sand thickness of both the oil sand and the gas sand in the West Edmond field.

A. That is correct. There was a committee of geologists that interpreted——

Q. That interpretation of the committee was a part of the plan offered by your clients to divide the oil and gas produced of the West Medrano field of the persons entitled thereto in the unitization.

A. They were not our clients, but our employers.

Q. That is correct, is it not?

A. That is right, yes, sir.

Q. Now I believe your committee, in determining the sand thickness established, first, certain control points in the West Medrano pool and adjacent thereto.

[fol. 509] A. That was necessary in making a construction map which is Exhibit 54.

Q. These control points consisted of wells in that area through or to the Medrano sand?

A. That was the basis of the map, Exhibit 54, yes, sir.

Q. These wells were your control points, that is correct, is it not?

A. Yes, sir, these are the positive control points shown on the map.

Q. By control points you mean a point at which you were able to determine the thickness of the oil sand and gas sand, or a point of water contact with the oil sand or contact between the gas sand and oil sand and all other matters that have to do with determining the thickness of the oil and gas sand?

A. That is reasonably so, yes, sir.

Q. Now, from these control points you obtained certain data which you use in determining the sand thickness, to-wit: cores taken from the wells and core analysis of the cores, is that correct?

A. Yes, sir, we used everything that was available.

Q. And electric logs were also available, were they not?

A. Yes.

Q. And sand cuttings and the actual testing of the well, that was the point at which the shots were fired in the sand and the subsequent oil and gas and pressures and the production records of oil and gas were all obtained from those [fol. 510] control points, is that not correct?

A. Yes, although there was a limit that you will go into in making a geology structure map.

Q. And what is that limit in?

A. In relation to pressure, that has no bearing on what the type of the sand is.

Q. I see by the information that you got from those control points was the information that you got by reason of the wells having been drilled and whatever scientific operations were carried on, in the drilling and completion of the wells?

A. That is right.

Q. Now then, as I understand your testimony, your committee then, from that information estimated the depth below the level of the bottom of the Medrano sand at each of the particular control points.

A. Not necessarily estimated in view of the fact that there were a number of the wells a majority of them drilled through. We did not consider that an estimate of the base.

Q. You have estimated, I believe you testified where the water sand began and the oil sand left off, isn't that correct?

A. You cut through the knome points, knome control points.

Q. We are talking about the control points now.

A. I believe in the majority of the cases, the point was determined by the control point, itself and did not require an estimate.

[fol. 511] Q. Isn't it a fact that you determine the bottom of the Medrano sand from each control point from the datum that you receive from the wells, the electric logs, the core analysis, and electric cuttings, and in making that determination, you included in the oil sand, any and all

sands which contained any oil, whether it contained water or not, that is true isn't it?

A. In view of the fact that the outside limits or the oil-water contact was placed on there it has originally any water encroachment on the edge wells was not considered in throwing that part of the sand out.

Q. You endeavored to include in the sand thickness, all sand as it was originally in place, before any drilling there was done, in the pool that contained any oil whatsoever, regardless of the water content, isn't that correct?

A. Well, there wasn't any attempt to evaluate connate water by our committee.

Q. Now, answer my question, please, sir.

A. That was answered. You said any water whatsoever.

Q. In other words, you mean to tell the Commission that you did include then in the sand thickness all sands that contained any oil whatsoever, regardless of connate water contact or salt water contact.

A. Connate water has salt water.

Q. What is the water that underlies the well?

A. That is connate water also.

Q. Do you call the water that underlies the oil and in [fol. 512] the sand with the oil all connate water?

A. Yes, sir.

Q. I see then, as I understand your testimony, you have told the Commission that you included in the sand thickness, this sand that contained any sand whatsoever, regardless of oil-water contact.

A. That is right, regardless of whether it is productive in that position, in other words, the minus on that Exhibit 54 is where we think the sand below that point, would have produced water and above that point, would have produced the oil.

[fol. 513] Q. You don't mean to tell the Commission that you included all sand containing oil, which wouldn't produce oil in commercial quantities, do you?

A. I believe that was our intention, yes, in view of the fact that the information we had was such that——

Q. Well, now, I don't want to argue with you,—but, for the purpose of clarity I am going to ask you, if in testifying

at the last sitting of the Commission in this case, about the core analysis, if you didn't say or testify in words to this effect,—That in sections of the sand which showed oil content but where the permiability was not sufficient to warrant commercial production in that one particular stratum and area, that whil- you had included that sand as a part of the sand thickness, you——

A. I might have told you and probably did that if there was undoubtedly more water encroachment in some of the wells that when we got below that water oil contact that sand was thrown out.

Q. Well, now, Mr. Witness, let's get down to this case, so we can proceed,—didn't you tell this Commission that it required a certain number of Millidarcies in the core before it would produce oil in paying quantities?

A. No, sir.

Q. Didn't you fix some certain number of millidarcies that were required to produce oil?

A. You mean from core analysis?

Q. Yes.

A. A comparison of different cores will get a lot of different——

[fol. 514] Q. Well, what is the highest number of millidarcies which you have encountered in the West Edmond pool?

A. Around six hundred millidarcies.

Q. Around six hundred, and you included in your sand thickness all sand that went down to even——

A. Yes, clear down to zero millidarcies.

Q. Clear down to zero millidarcies?

A. Yes, other than the fact that that I don't believe experts will contend that they can measure them down to zero.

Q. Now, then, from six hundred millidarcie sand, sand attending to show six hundred millidarcies of permiability clear down to the sand showing zero, you included all that sand in your sand thickness, didn't you?

A. Yes.

Q. And you know that sand that contains one or two millidarcies would not produce oil in paying quantities, don't you?

A. Well, I don't believe that would be one hundred per-cent correct and I have already explained that.

Q. Yes, and I think you said you included all the sand that contained any oil, at all, regardless of whether the engineer's figured out the extent of it,—you included all the sand that included any oil, at all, is that true?

A. That's perhaps right.

Q. Now, then, we determine where the bottom of the sand lies, and there was some discussion there about that, and you determine where the oil sand would stop, where the bottom would be,—would you say that any of your [fol. 515] controlling points, that in any of your controlling points, there would be a variation of five feet in the bottom of the Medrano sand, would there by any, that much difference?

A. No, not in my opinion.

Q. Well, how much would you say, on the average,—it's a matter of opinion is it not?

A. Not in some cases,—you can, in some cases get it down to the foot,—in some cases it is a matter of opinion.

Q. What percentage of the control point do you say that you did exercise some judgment in rendering an opinion as to where the bottom of the sand was,—as much as fifty (50%) percent?

A. It would be a rank guess, but it would be close to that.

Q. Would it be more?

A. Would it be more,—no.

Q. Didn't you testify at the last hearing in this case that in some of the control points there must be a leeway of as much as five feet, within which reasonable men might differ?

A. I suppose I may have said that, under pressure,—six of the eight men agreed on these points.

Q. The opinion of the eight men agreed on these points. The opinion of the Committee was unanimous, was it not?

A. Yes.

Q. But before you reached that opinion did you have different ideas of where the top and the bottom would be and was there a discussion about that?

[fol. 516] A. Well, there was considerable discussion about that, yes, sir.

Q. Did you fix the bottom of the sand at each control point from the data and the information you had at hand?

A. That's right.

Q. Now, you have testified that the top of the sand was fixed in a similar manner and by the same data, and same methods?

A. Yes.

Q. Now, after you have established the bottom of the sand at those control points, then I believe you testified, that you drew lines on a map which estimates the bottom of the Medrano sand at a certain number of feet below sea level, as represented on Exhibit 54, is that correct?

A. Exhibit 54 is the top of the Medrano,—they would both be the same, that is, as far as a method of contouring is concerned.

Q. And in drawing the lines you estimated the course which they would take, from the datum that you had established from these control points,—isn't that right?

A. That's right, yes.

Q. And all you had to go by in determining these contour lines was the top or the bottom of the Medrano sand at the points where these wells were drilled, isn't that right?

A. Well, that's true.

Q. Did you determine the thickness of the Medrano sand from any wells that were drilled above the Medrano sand?

A. No, sir, we did not.

Q. You couldn't use those?

[fol. 517] A. That's structural position——

Q. But you did use structural position in drawing the contour lines?

A. Well, we used our knowledge.

Q. But you considered structural position in drawing your contour lines?

A. Oh, yes, to a great extent,—you do that unconsciously.

Q. Now, then, after you had prepared contour maps showing the bottom of the Medrano sand and the top of the Medrano sand by indicating the depths below sea level,

you then decided to transpose one map upon the other, is that correct?

A. Yes.

Q. And the purpose of that was to get another map, make another map which would show the thickness of the Medrano sand, the oil sand in one instance, and the gas sand in the other?

A. That was to give us additional points other than just the well control points,—it was to assist——

Q. Now, then, in what points, control points, did transposing the contour map of the top of the Medrano and the bottom of the Medrano sand,—could you show the Commission any additional control point you obtained by transposing one of these maps on the other?

A. No, for the reason that these points are placed on there to indicate where the top of that sand map and the base of this sand map.—for instance where you find minus forty-four hundred crosses minus forty-six hundred here (indicating on map) you have a difference of two hun- [fol. 518] dred feet.

Q. Then in preparing Exhibits 56 and 57 you secured additional control points that you used by transposing the contour map of the top of the sand on the contour map of the bottom of the sand, and where one of these contour lines crosses another, that gives you an additional control point?

A. Yes.

Q. Now, then, from these additional control points that were obtained by transposing the contour map of the top of the sand on the contour map of the bottom of the sand, were those used in preparing Exhibits 56 and 57, which are the oil and gas thickness maps? And you then took those control points, disregarding the actual well control points, then made the contours on your actual sand thickness maps, Exhibits 56 and 57,—isn't that correct?

A. No, we continued to use the well control points,—we used the well control in conjunction with the other.

Q. I see, and if the well control thickness and the contour line thickness map varies then you took the well control figure?

A. No, they wouldn't vary.

Q. Well, tell the Commission how you used the data from the well-control point in drawing the contour lines of the sand thickness map in conjunction with the control points that you had obtained by transposing these maps one upon the other as you have testified,—tell the Commission in what way you used the actual well control points when you were preparing the isopac map, oil and gas sand thickness map.

[fol. 519] A. I believe I tried to explain that awhile ago, that the well control points were used as the leading factor and the other points were used as an assist in making the estimates of the thickness of the sand.

Q. Now, were any other control points,—was any other control used besides the points that you have enumerated?

A. In making these contour maps?

Q. In making the sand thickness maps, Exhibits 56 and 57?

A. None other than the well control, that I know of.

Q. Now, Mr. Montgomery, will you kindly refer to Exhibit 54 on the blackboard, which is a contour map of the top of the Medrano sand and tell the Commission whether or not control-point No. 56, which is the Stepehsn Petroleum Company's Dome-Bo well was drilled to the Medrano sand?

A. Yes, it is the opinion of the committee that it was.

Q. Did that well produce any oil after it had a showing of oil?

A. Yes.

Q. How many barrels did it produce, if any?

A. I don't think it produced it in barrels.

Q. Well, tell us how much oil it did produce, if any?

A. It indicated that it had a showing of oil only.

Q. Mr. Witness, did your data that you used in preparing the map indicate that it ever produced any oil?

A. No, sir, none other than our regular scout information.

[fol. 520] Q. What did that show?

A. They showing, the test indicated from fifty-five to sixty-one hundred they had a showing of oil and some water.

[fol. 521] By Mr. Reford Bond, Jr.:

Q. How much oil did you conceive of or did you understand by a "a show of oil" of this particular report you are reading from?

A. As I understand it this was a very light showing in the well.

Q. Can you reduce that to barrels or a cup or a tank full?

A. A cup or a barrel would indicate a show.

Q. You mean a tea cup?

A. Yes, sir.

Q. Well, isn't it a fact that this well is a dry hole?

A. Not necessarily, no, sir.

Q. You marked it on your map as a dry hole, why did you do that?

A. That was the operator's opinion in that they plugged the well.

Q. You mean this map doesn't disclose your opinion, but discloses the operator's opinion, is that your testimony?

A. There is a question as to whether the well was adequately tested in that from these perforations they swabbed the well from the bottom, set over night, and had a small increase in water but no increase in oil. That was the extent of the information that we had on the well without properly testing. They then set a Lane-Wells plug and abandoned that part of the hole.

Q. Now, then, Mr. Witness, would you want to give the owner of that land an allowable of oil on evidence of that kind?

[fol. 522] A. That wasn't our problem.

Q. In your opinion would that well produce oil in paying quantities?

A. There is an element of doubt whether that well was adequately tested or not.

Q. What is your opinion?

A. My name is on the map,—up there and I believe there is very good evidence, as far as I am concerned, that there will be production on the lease, at least I cannot condemn it from the facts at hand.

Q. Are you telling this Commission that this well here would produce oil in paying quantities if properly and completely tested?

A. Not necessarily, no, I don't think that the well was adequately tested to determine it's ability to produce are non-produce.

Q. Well you have given this field a lot of study haven't you?

A. It so happens I have seen a lot of other wells tested similarly to this that have been producers.

Q. In this Medrano pool?

A. Not in the Medrano pool, but in the State of Oklahoma.

Q. Now Mr. Witness, I will ask you again to state to the Commission your opinion as to whether this well, the Stepehens-Petroleum-Dome-Bo No. 1 in the area of the Stephens-Petroleum-Dome-Bo lease lying over the Medrano pool as indicated by your Map, Exhibit 54 will produce [fol. 523] oil in paying quantities?

A. No, I believe that was brought out here two or three months ago at the hearing.

Q. You say it will not?

A. I don't say that,—I said that in our hearing that was explained before and that was gone into quite thoroughly.

Q. Well do you have any adequate opinion as to whether or not it will produce oil or gas in paying quantities?

A. As I started to answer your other question,—

Q. Yes.

A. If you will notice on East half of 29 the contours are dashed, which in itself is indicative that the condition, the geologist was undecided in detail as to whether it would be commercial production or not,—which in turn was brought about by the testing by the Dome-Bo and which we didn't believe was conclusive.

Q. Do you mean to tell the Commission that the purported facts that are set out on this map, Exhibit 54, aren't the opinion of the Committee that made it?

A. It is the opinion of the Committee that made it, yes, sir.

Q. And the facts as set out about this particular Stephens

Petroleum-Dome-Bo Well on this map is that the opinion of the Committee?

A. It is. That is the reason that the contours are dashed.

Q. Then, will you tell this Commission why your map shows that that well is a dry hole and yet you don't [fol. 524] say that it is? ——

A. I believe I have answered that question a couple of times,—I mean——

Q. All right,—

A. That thing, we didn't believe that the well was conclusively tested as to whether it would produce or not.

Q. Was it your intention to include this sand thickness map in area all questionable sand and areas as well as known sands and areas?

A. All those that were within reason, we included.

Q. You cannot definitely tell this Commission that it isn't your definite opinion that the Stephens Dome-Bo well would produce oil in paying quantities, can you?

A. No, sir, I cannot.

Q. Now, then, I call your attention to the Stephens Petroleum well Pell, which is marked control point 75 on your Exhibit 54, I will ask you to state if you know how much oil that well has produced?

A. I don't know.

Q. Did you have those figures before you at the time you made the maps?

A. At the time we made Exhibit 54, we did, yes, sir.

Q. Do you know how much oil that well is producing today?

A. It is a rather small well, I understand,—the exact figures I don't know.

[fol. 525] Q. Can you advise the Commission as to the amount of oil that the well had produced at the time you made these maps and considered the data about that well, that was available to you?

A. No, and I don't think that would have made any particular difference from the structural standpoint, from the problems we had in mind in making our studies.

Q. In determining the sand thickness, then you didn't consider the amount of oil and gas that well had produced or was capable of producing?

A. Other than the fact that it would produce or would not.

Q. In the case of the Stephens Petroleum-Dome-Bo well No. 1, which had never produced, you concluded that merely on your opinion that it might produce considering the structural conditions in that particular area, is that right?

A. In view of the facts, we don't think the well was conclusively tested.

Q. Now then, I call your attention to Anderson-Prichard, Prentice well 1-B, which you have marked as your control point No. 2, I will ask you to state to the Commission whether or not that well produced oil?

A. It did, yes, sir.

Q. How much did it come in for?

A. I don't have those figures at hand.

Q. Was it or not a large or small well?

A. My recollection it was a small well.

[fol. 526] Q. Do you have your figures with you on that?

A. Not production records, no, sir.

Q. Can you obtain that?

A. Probably the Engineering Committee have those figures,—I don't have them.

Q. You considered that in making your maps?

A. It was a producer.

Q. Did you have the initial open flow of the well when you made the map?

A. We probably did, but it wasn't considered.

Q. Now then, what about the Anderson-Prichard, 4-A Prentice well which you have marked as your control point No. 3, was that producive of oil?

A. Yes.

Q. Was it a large or small well?

A. I don't recall exactly what sized well it was.

Q. Do you give those two wells a sufficient consideration as to whether or not that particular area on which they are located in the West Medrano pool would produce oil or gas, or gas in paying quantities?

A. No, sir.

Q. You have made a careful study of the field, however, have you not?

A. From a geological standpoint, yes, sir.

Q. Now, in your opinion, would the area which the Anderson-Prichard Prentice 1-B is located produce any oil [fol. 527] in paying quantities?

A. I haven't kept up in detail with the wells as to how much production they have recovered to date.

Q. Well considering the matter structurally, and you are acquainted with that, are you able to give an opinion as to whether or not that area will produce oil or gas in paying quantities?

A. I haven't made any study on it at all.

By Mr. Williams:

Q. Was the question as to the amount these wells produced part of your problem or part of the problem of the Engineering Committee?

A. I stated that before, yes, sir, that's right.

By Mr. Reford Bond, Jr.:

Q. Did you include areas in this Medrano sand map which would not produce oil or gas in paying quantities?

A. That was still not our problem as to the economics or the equities involved. Our's was purely a study of the geological aspects of the area.

Q. And if it contained any oil or gas whatsoever that was sufficient for you, is that right?

A. That's correct, yes, sir.

Q. You tried to include all sand whether it contained oil or gas in commercial quantities or not?

A. The paying quantity was not the factor.

Q. Wasn't the measure?

A. No, sir, it was the factor that it had so much sand. [fol. 528] Q. What was the measure as to oil content?

A. From the fact that wells would produce oil or gas in that area, not the amount that they would produce.

Q. Now then, I call your attention to the Anderson-Prichard McClaren lease, in Section 6 and the Amerada McClaren lease in Section 6, I will ask you to state to the Commission why that area was included in your map?

A. From an interpretation and opinion of information that was obtained.

Q. From that information were you of the opinion that area overlaid an oil sand or gas sand in the Medrano pool?

A. It was our opinion that the Medrano sand underlaid that area to the Southwest of that Northeast Boundary.

Q. Is it your opinion that the McClaren lease would produce oil or gas in paying quantities?

A. That wasn't our problem.

Q. Well, do you know sufficiently of the geological and structural conditions of this area to say whether or not that a well drilled on either one of these McClaren leases at any place would produce oil or gas in paying quantities from the Medrano?

A. It so happens I haven't made a study of the paying quantities side of it, but it is my opinion that the Medrano sand wouold be present in that area. It would contain oil or gas and/or gas.

Q. Do you tell this Commission you can form that much opinion and not be able to say whether it would produce in paying quantities?

[fol. 529] A. There is a lot of factors involved about whether it is in paying quantities or not.

Q. You do tell the Commission you can go into the matter far enough to determine it will produce oil but still you would have to have more information before you could say whether or not it would be in paying quantities, is that your testimony?

A. That is partly right.

Q. In what part is it wrong?

A. When the gas allowable at the Cement Medrano based on 160 acre allocation and those whole leases would get such small allowable that it would be impracticable, impractical to try to drill them for a gas well, if they were the only gas well in the field, in the Medrano Zone, in the gas cap, it would probably make a lot of money.

Q. What do you say about the oil area?

A. It would be a problem of drainage and how many other wells were competing with you and how lucky you were, how good a hand you got in one hole, you drilled, and whether the pressure it figured to drop as they have

in the past down there and whether they would run to the hole or not,—there are a number of factors involved as to whether the well would be commercial well or not.

Q. You do not have such information as those factors to tell this commission whether or not that area would produce oil or gas in paying quantities?

A. No, sir, because I cannot accurately evaluate all the factors.

[fol. 530] Q. Now your last control point at the sand thickness, that is in proximity to the McClaren lease, is the Anderson-Prichard 1-B Prentice 1-B, is that correct?

A. Yes, sir.

Q. And your next control point is the Anderson-Prichard Prentice 4-A?

A. Yes, sir.

Q. Now then, there is another control point directly North of either the Anderson-Prichard 1-B or the Anderson-Prichards 4-A, clear to the fault line, is that correct?

A. That line is not necessarily to be interpreted as a fault line.

Q. We will say the Northeast boundary of the pool, is that correct?

A. There are no wells there, there are some across that line.

Q. Now then, to the East of the line, you have the Amerada-McClaren No. 1, is that correct?

A. That's right.

Q. And that is a control point East, is that right?

A. Yes, sir.

Q. Now then, was the Medrano sand present in that well?

A. No, sir.

Q. Not present at all,—how deep was it drilled?

A. I do not have the record of it right here, but it was adequate and the well correlated enough there was no question but what it had penetrated deep enough to show [fol. 531] there was no Medrano sand present.

Q. It was from that control point which you marked control point No. 1, that you determined the extreme South boundary line of the pool, that is the Northern boundary of the Southeast tip?

A. That's correct.

Q. Now then, your contour line on that area which is South of the Edwards fault runs in a general Southeasterly direction, isn't that true?

A. Structurally contours, yes, sir.

Q. Until you reach the West line of the McClaren lease, isn't that correct?

A. That's right.

Q. And then your structural line turns and goes about due East for a small ways and then turns to the Northeast, isn't that correct?

A. That's right.

Q. And run into the fault?

A. That is not a fault, that is a boundary again.

Q. All right, into the boundary, excuse me,—now then, tell the Commission how and why you changed the course of those two contour lines after you passed the only two control points that you did have, the Prentice 1-B, Anderson-Prichard and the Prentice 4-A, Anderson-Prichard?

A. The electric log and samples although there was no Medrano sand present in the Amerada-McClaren well on the extreme corner of Section 6, there was evidence of where [fol. 532] it should have been and by a control both above and below that zone, as well as that zone, itself, show that should have been present, that indication of it being present was being used as a control point therefore governed the shape of the contour in that area.

Q. So you turned your contours away from the general trend of that field on the information you obtained from a well that was drilled clear on the outside of the West Medrano pool and to the North and East of the North boundary line, that is the Amerada-McClaren Well No. 1?

A. It was a control point, yes, sir.

Q. That was the thing that made you turn the contour?

A. That's right.

Q. Now then, I will ask you if you, if it isn't just as reasonable to say that these contour lines of structure would continue on to the Southeast in this segment south and East of the Edwards fault, as it did in the case of the segment between the Edwards fault and the Hartshorne

fault, and the segment between the Hartshorne fault and the Sterba fault, and the section between the Sterba fault and the Sherrit fault and the section north and west of the Sherrit fault?

A. I don't follow your question exactly,—on the other hand, I believe what you are driving at, the reason contours do not go on past on East and Northeast boundary is that the Medrano sand isn't found in the West side of the East Cement field.

[fol. 533] Q. You have no control point to the Southeast of the Anderson-Prichard Prentice 1-B at all?

A. Yes, sir.

Q. What are they?

A. There has been several wells drilled in Section 5.

Q. Southeast of the Anderson Prentice 1-B?

A. That is due East along that structural equivalent to the Medrano field of the West Cement area.

Q. Were they drilled south of the Amerada-McClaren No. 1?

A. No, they were drilled East.

Q. East of that?

A. Yes, sir.

Q. Wouldn't your McClaren-Amerada No. 1 be a better control than some well drilled on East of it?

A. It was the deciding factor as far as the limits of this map is concerned, yes, sir.

Q. But the other factors you used in addition to the Amerada-McClaren No. 1, was wells drilled East of that in Section 5?

A. Yes, sir.

Q. Do you have any control point to the South or to the South of the Amerada-McClaren No. 1?

A. Not due South, no, sir, except to the Southeast in Section 9-5-9.

Q. In Section 9-5-9, that is how many miles South and East?

A. Roughly, about a mile and a half.

[fol. 534] Q. About a mile and a half Southeast, do you mean to tell this Commission that you turned the contour line, turned the direction of them completely as they appear here on the McClaren lease, on the basis of some

information you had from a well drilled a mile and a half away?

A. No, sir, on the basis of the Amerada No. 1 McClaren as explained a few minutes ago.

Q. Which did not even encounter the Medrano sand?

A. No, sir, it did have zone though.

Q. You mean the zone was there, but no sand?

A. That's right.

Q. Well what was in the zone?

A. Lime and conglomerate.

Q. Did you find the same thing, lime and conglomerate all along the North boundary line outside of the pool?

A. Sir?

Q. Did you find the same sort of information all along the North boundary line of the West Medrano pool?

A. No.

Q. Well, I'll ask you if you didn't find the same thing on the Cement Edwards No. 4, that the sand had pinched out and you didn't have anything left but lime and conglomerate?

A. It did have some line and some chert, and sandy conglomerate in that well, but it doesn't appear to have direct connection with the Medrano in the field proper.

[fol. 535] Q. I will ask you if you didn't find the same thing in the Ohio-Ramsey-Rowe No. 2, and the Stephens-Westerfelt No. 1 and the Geregrich-Ramsey No. 1?

A. I believe the No. 2 Rowe-Ohio, had one of the better developed section that could be possibly interpreted as Medrano, but it apparently had some connection the Medrano or the field proper and the Gingrich had very poor development of Medrano zone at all, it was somewhat comparable to the Amerada-McClaren.

Q. What about the Westerfelt?

A. It had a zone that was probably Medrano equivalent in the section but could not be definitely connected with the Medrano.

Q. I will ask you if it isn't a fact from those control points, and the information obtained from them, you did know that the Medrano sand pinches out there and drew your boundary line accordingly?

A. That was the basis of drawing the line, yes, sir.

Q. You have drawn that North boundary line just with reference on the basis of what you got, the information you got off this Amerado-McClaren No. 1, didn't you?

A. And the other wells you mentioned, yes, sir.

Q. And that determined the North boundary line, well then, why don't you bow these structural contour lines up to the North and the East of the same information that you obtained from the Ramsey-Gingrich, Stephens-Westerfelt, and the Ohio-Ramsey Rowe and the other control points along the West side of the field?

[fol. 536] A. I don't follow that question.

Q. You say you turn these contour lines off to the North and East over the McClaren lease because of the information you got out of the Amerada-McClaren No. 1, I am asking you, you say you got the same sort of information all along the North line of this pool, I am asking you why you didn't turn these other contour lines up to the Northeast on the same information?

A. Probably would have if the datum was such that it should have been turned back and this structural map as outlined is structurally on the Medrano sand and is not the complete structural picture of the West Dome of Cement,—in that the Medrano sand isn't present there and consequently that part of the structural position of the West Dome of Cement wasn't included in Exhibit 4.

Q. How was the structural position of the Amerado-McClaren No. 1 which was drilled, vary from the structural point at the point that the Ramsey-Gingrich No. 1 was drilled?

A. Exhibit 54 wouldn't hardly demonstrate that, and was not meant to demonstrate it.

Q. Well, do you know?

A. Yes, sir.

[fol. 537] A. On an old work map that we used at the office, our information was based on that. The Medrano was not given any particular place on this map other than it was just in that formation, it so happens that Peppers-Ramsey No. 1, in the northeast quarter of Section 6, did not have any Medrano sand, it was quite higher than Amarado-McClaren, and the map that we worked would and with more wells reach common datum points, that is the

datum that it's controlled on rather than the Medrano sand. It's sort of one of the common practices of the cement as the black ostocode zone or ostocode lime or puletic lime, that is on our common work map.

Q. And that is your answer as to what you termed here, the control lines up north?

A. From the active control lines of the Amarado-McClaren, it is indicated by the zone that we thought that was equivalent to the Medrano as well as our information on the rest of the wells of the area.

Q. Well now, I will ask you, if it isn't a fact, Mr. Montgomery, that there was each one of those particular segments as developed to the southeast, that was the discovery, was it not?

A. We went both ways.

Q. But it was to the southeast in the last two segments?

A. That is right.

Q. I will ask you if it isn't thought by many geologists, before the wells were drilled on the Prentice, the control lines were running back to the northeast and cut out the Prentice and it would not produce at all.

[fol. 538] A. There were probably some that thought that, but that is no basis.

Q. That is a respectable geologist opinion?

A. I did not hear anyone make that statement.

Q. Isn't it a fact that the only true test whereby the control lines run back northeast of the McClaren, was to drill a well there?

A. The Amarado-McClaren does that.

Q. The only way to really tell is to drill a well on that particular well on the McClaren lease in the Medrano pool and through the Medrano sand, before you could tell how much it will produce and whether it is running low structurally, low or whether it will continue on to the southeast.

A. The only way to get the exact types is strip the——

Q. We know that.

A. The only way is just in between these wells (indicating).

Q. You don't always strip all the over-bottom off and you don't find out that way, you don't dig the dirt down to the sands to see how deep it is?

A. No.

Q. But you can't ever determine how much the McClaren lease down here (indicating) will produce or the extent of the structure until you drill a well.

A. To demonstrate the fairness of any of the questions, you just asked as to drilling——

[fol. 539] Q. And the last wells that you drilled in that particular direction which Anderson-Prichard 1B Prentice and 4A Prentice, you still had the structure lines running to the southeast, that is the last direction running off the last wells drilled?

A. That is right.

Q. Now then, you turned off the other way without any actual well drilling in the Medrano sand?

A. The zone was on the McClaren.

Q. That isn't in the Medrano sand, that is on the other side of the pool limit.

A. That determines the limits of the pool.

Q. That is right, and you didn't turn them, though, on any well that was drilled inside the pool, did you, now you didn't, that is right, isn't it?

A. I think that you and I are talking about entirely different things.

Q. No, we are not. The control lines of structure are running to the southeast of the two Prentice wells, and that was the last wells that you had in the Medrano sand to the southeast, that is correct?

A. But the pool wells of the structure of the area.

Q. That is correct.

A. (Indicating) These are the two last ones in the producing zones.

Q. And each of the wells, the line of structure still runs to the southeast, that is right?

[fol. 540] A. That is right.

Q. And if you drill a well over here (indicating) on McClaren, you expect to get the Medrano sand from it, the southwest of the southeast of the line?

A. Yes.

Q. And if you get the Medrano sand, that you can tell definitely whether they turn off to the northeast or southeast direction?

A. Yes.

Q. A reasonably prudent operator might drill a well there and expect to get production in paying quantities?

A. That is up to the operator.

Q. And there will be a lot of expert geologist's opinion to tell the operator to drill there and that you might get a well in paying quantities?

A. I think so.

Q. If the Commission please, I don't believe I have any further questions to ask this witness, and if we think of any further questions, we would like to recall him to the stand.

Chairman Bond: Very well.

Reford Bond, Jr.: At this time, we would like to offer the electric logs and the core analysis that this witness has testified from as a part of his examination.

Chairman Bond: Do you want to withdraw the originals and substitute copies?

Mr. Williams: Yes, if they are ours.

Chairman Bond: Received and you may substitute copies for the originals.

[fol. 541] Mark Adams examines the Witness:

Q. You have me confused, you stated, I believe, in part of your testimony that you established the control lines as to the thickness of the oil and gas of the Medrano by using some one of the factors, the amount of oil that has been withdrawn from the various wells, did I understand you correctly?

A. You surely didn't.

Q. What line did you establish, the oil-water contact in that manner, didn't you so testify?

A. The sand thickness map of the field itself was determined by the sand, but the correct line by the performance of the well.

Q. The sand thickness was determined by where you put the oil-water contact well?

A. Yes.

Q. And you did testify that you determined the sand thickness likewise of the original time before there was

any oil removed and in doing that, you considered the amount of oil that had been produced, didn't you so testify?

A. I don't believe that is correct.

Q. What did you do? Did you consider the amount of oil that had been withdrawn?

A. No, in view of the fact that we used a sub-sea depth as to where the oil-water contact was, I believe I did make the statement that there was probably some water encroachment and that some of the sand had consideredable more water at this time than originally.

[fol. 542] Q. You tried to reconstruct it back when there was no production?

A. Yes, sir.

Q. And, you do have to take into consideration the amount of oil that has been produced, in each lease and each segment, is that or is it not true?

A. No, we did not try to compute the number of barrels that had been produced.

Q. You just guessed it off?

A. No.

Q. What did you use as factors?

A. In that Amarado No. 2, Hartshorn, in Section 2, important well in our conclusion as well as the approximity of the original oil level, was made from estimate, was found by Gulf on their share, at least, and Amarado on the Beamer lease, it for the reasons that we placed the water level as we did through the areas, with the producing factors, as to where we would put it relative on the foot as to being the cores of No. 2, Hartshorn No. 2.

Q. You didn't establish the oil-water level in segments C where the Phillips Margel well dropped water?

A. It wasn't a water well.

Q. It made water, from the slush, didn't it?

A. Not to my knowledge.

Q. It makes from 10 to 15 per cent of water now.

A. Not to my knowledge.

[fol. 543] Q. You don't know anything about production down there?

A. Not in detail.

Q. Who told you about how much sand thickness to give to each lease?

A. No one.

Q. Did someone tell you that the leases, on the leases in the northeast segment, the Gumbo lease and Stephens was to be given a thickness in order to commercially produce?

A. No, sir.

Q. When you made your report, to whom did you make your report, your geological report?

A. We made it, I guess you would call it that, we turned the map to the operative and engineering committee.

Q. I believe there were 8 or 9 geologists on the committee?

A. I believe they are listed on the map.

Q. I can't read it from here, it looks like about six.

A. About eight.

Q. You fellows got together and you didn't agree and did some trading?

A. No, sir.

Q. You did not?

A. No, sir.

Q. Whatever that map shows, it's your opinion, and you didn't do any trading.

A. No.

Q. To whom did you give the report?

[fol. 544] A. The operating committee.

Q. Who was that?

A. Representing the different companies.

Q. You made it to Mr. Kaveler?

A. No, sir.

Q. They told you what they wanted, what they wanted you to show by way of maps?

A. It was presented to me that they wanted a sand thickness map and with Medrano.

Q. Irrespective of whether it showed producing sand thickness or not, they wanted a sand thickness map.

A. That was my understanding.

Q. When you say sand thickness map, you don't mean sand thickness map, you are supposed to have a sand thickness map.

A. That came out in the meeting of the geologists and that was decided on by us.

Q. That you would prepare a sand thickness map?

A. Yes, that is correct. We didn't want to get involved in the equities of the stock.

Q. Are you familiar with all the reports made in this manner, both in geology and engineering?

A. I am familiar with most made by the geologists but not by engineers.

Q. As a geologist, you didn't fix the equities in any respect?

A. Other than what we considered when we considered the sand thickness.

[fol. 545] Q. You expected somebody else to determine what part of the sand thickness under each lease, met by productive, not as oil and gas in commercial quantities.

A. That was the program, yes, sir.

Q. As you understood it?

A. Yes, sir.

Q. You attended a meeting since the last hearing, did you not, where the engineers expressed some concern over the equities in regard to this plan offered to the Commission.

A. I did.

Q. And it was the concensus of opinion that the geologists committee and engineering committee should get together and work out this evidence in the plan.

Mr. Williams: We object as hearsay and improper cross-examination.

Chairman Bond: You may answer if you know.

A. It was not the concensus of opinion of the geologists and engineers, because they were in minority.

Q. Your company was represented by Mr. Kaveler and you and Mr. Williams?

A. That is right, but the geologists were in minority. Some of the operators did not understand the problems of the geologists and engineers because we thought we understood each other.

Q. And you found that you didn't?

A. We still understand each other, as in the beginning

our maps are not changed and our data is the same as it was originally.

[fol. 546] Q. But it doesn't attempt to fit the equities in any respect, in any leases segments?

A. Other than the sand thicknesses as determined by the committee, with the facts involved in the hearing before.

Q. After it was determined at this scene that the geologist committee and engineering committee should get together and work out these inequities, was that conference held or was the thought dissipated?

A. It was actually held.

Q. Was a report made as of the result of that meeting as a so-called operating committee?

A. As far as the geologist was concerned, no written report.

Q. Did you make a report to anyone as a result of that meeting?

A. Not officially that I remember of.

Q. Was Mr. Kavaler present at that meeting?

A. No.

Q. Who was present at the meeting and where was it held?

A. Twelfth floor of the First National Bank Building and engineers present were Gilbert Wood, Mr. Godbold and Mr. Dankerson and the geologist- present were Lawrence Feur, Dr. Brauchli, Mr. Richards with the Gulf, Mr. Morman of Magnolia, Mr. Wallace with Stevens Petroleum Company and myself, that is my recollection of the ones that attended the meeting.

[fol. 547] Q. So whatever you have done in this matter, at all Mr. Montgomery, you haven't in any manner, as an expert or otherwise, attempted to cause anyone to form an opinion as to the amount of oil in place in any particular lease in any segment, is that correct?

A. It hasn't been my intention to so indicate to anyone.

Chairman Bond: The Commission will recess until one-thirty p. m.

[fol. 548] Mr. Reford Bond: If the Commission please, I've agreed with Mr. Williams and Counsel that the electric logs and core analyses that were offered as part of Mr. Montgomery's testimony just before lunch and at the close of my cross-examination shall be numbered Exhibit- 70-A, 70-B, 70-C, etc., each instrument having a different letter, and I want that stipulation to appear in the record, particularly since Mr. Williams and his client do not have the electric logs in Court at this time for the Reporter to mark them, and Mr. Williams has agreed that he will produce them, both the core analyses and electric logs so they can be marked by the reporter before the hearing is closed.

Chairman Bond: You have stipulated,—very well, Gentlemen, the Commission will respect the agreement and the record may so show.

Mr. Williams: We'll agree.

Mr. Reford Bond: Now, if the Commission please, I would like to ask Mr. Williams if he doesn't have electric logs on all the wells, and also the core analyses.

Mr. Williams: I think we do, probably.

Mr. Reford Bond: I think you have them.

Mr. Williams: We'll supply them.

[fol. 549] Examination by Mr. Adams:

Q. Mr. Montgomery, I believe we were talking just before lunch about the reconvening of the Geological Committee in conjunction with the Engineering Committee which was chosen by certain of the operators who were applicants here at a meeting held sometime subsequent to the last hearing in this matter before the Commission, to refresh my recollection, isn't it a fact, that at the time of reconvening of those two committees Mr. Stephens he would attempt to recondition the Stephens-Pell well, and that after that had been done and the results were known that the Committee, would then further consider whether or not inequities would arise from the present computation in respect to the segments herein involved?

A. There was some discussion about reconditioning the Pell well.

Q. Do you know whether that well has been reconditioned?

A. In my belief, it has not.

Q. Do you know whether steps have been taken to recondition it?

A. Well, about a week ago, I talked to them and they were planning on doing it,—the unit was not on the list, but whether they were going to move it, I don't know.

Q. And the conclusions from that might be to change the maps which you have presented to the Commission.

A. No, it wouldn't change the maps.

[fol. 550] Q. Why not?

A. Because ours is a sand thickness map and the equities that will be given to the Pell lease had no bearing on our Geological map.

Q. Now, your geological maps, 54 and 55, are dated April, 1946,—is that correct?

A. That's correct, yes.

Q. Do you want the Commission to understand that this map is supposed to depict the facts as of April, 1946?

A. As of April, 1946, yes, sir.

Q. Then it doesn't purport to represent the facts that existed in the Medrano sand section in the various segments, before there was any oil produced from any of those segments,—there was production before April, 1946, was there not?

A. Oh, that's correct.

Q. Then it depicts the condition as of April, 1946.

A. The structural thickness of the sand is shown on these maps, is as of April, 1946 but the contents were as we interpreted them to have been originally before production was found.

Q. Well, Mr. Montgomery, that answer, to me, contains two assertions which do not seem to reach logical conclusions,—do you mean the picture, did not change, in your opinion, from the time before there was any oil produced up until April, 1946?

A. The structure undoubtedly did not change. There might some subsequent information that might cause you to change that picture.

[fol. 551] Q. But has there been any information developed in any of those segments since April, 1946, that would cause you to change any of your contour lines?

A. Yes.

Q. And that information was obtained by drilling, isn't that right?

A. That's right.

Q. So that any portion of the field which has not been drilled, those called contour lines are placed there by guess, aren't they?

A. No, I don't consider it,—we think there are enough wells to adequately interpret the thickness.

Q. Will you take that picture and go to segment C of the Exhibit 54 and point out with reference to that segment what development has occurred since April, 1946 which would occasion the change of any of your contour lines on that Exhibit?

A. The Palmer-Sterba, Palmer drilled the Sterba well, that might make minor changes in the map, which is to be expected.

Q. You were on that well part of the time, weren't you,—you are familiar with the showing?

A. Yes, sir, that's right,—I looked at the samples and was on that location.

Q. Now, where was the top of the oil bearing section of the Medrano sand found at approximately the location shown on Exhibit 54?

A. I don't know, from memory, but I could check it up.

[fol. 552] Q. Please do so, so we may have it accurately?

A. At minus 4371.

Q. What does the map show?

A. It shows an interpolation between minus 4300 and minus 4400, probably 4385, which would indicate that the top of the sand was found about fourteen feet higher.

Q. Would you mind drawing a line on Exhibit 54 to show where that contour line should be at the location of that well?

A. It would move your minus 4400 contour slightly to the Southwest, approximately, oh, one thirty-second of an inch.

Q. Indicating a rise in the top of the oil bearing section of the Medrano sand, of about fourteen feet?

A. That's right.

Q. Now, that well was drilled through the Medrano section, was it not?

A. Yes.

Q. Do you know where the bottom of that sand section was located there?

A. At minus 4467.

Q. Referring again to that map, Exhibit 54, will you compare the base of the oil producing section in the Medrano sand as found in this well and reflected on this map?

A. Exhibit 54 is at the top.

Q. Do you have Exhibit 55?

A. It is in this roll.

[fol. 553] Q. Would you again refer to it and answer the question?

A. (After examining Exhibit 55) It would move the contour slightly to the southwest.

[fol. 554] By Mr. Adams:

Q. You know where the bottom of that sand section was located?

A. Minus 4467.

Q. Referring again to your map, Exhibit 54, will you compare the base of the oil producing section in the Medrano is found by this well and as reflected on such map?

A. Exhibit 54 is the map.

Q. Do you have Exhibit 55?

A. It is in the roll.

Q. Would you mind referring to it?

A. It would move the contour on top back West, while it passes Northeast of the well and it would then pass Southwest of the well.

Q. It would raise the base contour how many feet, or approximately how many feet, I am ta-king about the base of the oil bearing section of the Medrano sand at that location as reflected on Exhibit 55?

A. Oh, approximately forty feet.

Q. And if you extended the contour line of the base of

the Medrano sand section in accordance with the information as disclosed by this Palmer Oil Corporation, Sterba No. 7 and ran it in a line to the Northwest,—to the Sterba fault, it would materially reduce the portion of the Medrano sand section that is presumed from your map, Exhibit 55, to lie below the depth of 6000 from the surface, isn't that correct?

A. Yes, surely if the well control is found at No. 7, is [fol. 555] found that the Medrano is higher to any degree or extent.

Q. Forty feet is quite a lot, isn't it?

A. It is normal, but in this condition the main thing that causes the base of the sand to be forty feet higher is the fact that the lower part of the sand proper had shaled out.

Q. That is all the information you have to go on?

A. That's right, structurally it was a very little in variance, it was the same thickness as far as that four feet deep.

Q. Fourteen feet is very substantial when you deal with one hundred feet?

A. Fourteen as against one hundred not at Cement Medrano,—it is in some areas.

Q. Do you know how many barrels of oil this is presumed to be in fourteen feet of the oil sand thickness per acre in the Medrano field?

A. I have not calculated it, nor have I had occasion to examine any one else's calculation.

Q. To you, fourteen-one hundredths wouldn't be material?

A. The sand thickness from one hundred feet and the fact that it was feet higher and has no particular bearing inside the oil zone as this well was located.

Q. I would like you,—I don't know whether you spoke from memory, or whether you spoke from some memoranda you had in your hand, but actually the top of the Medrano in the Palmer Oil Corporation-Sterba No. 7 was found that a minue 4362, was it not, instead of 4371?

[fol. 556] A. 4371 is where it was determined by the Committee of Geologists.

Q. I see, now you have used several wells which you have designated by number as control points, and in doing so you have made your contour lines with respect thereto, that is correct isn't it, on your Exhibit 55 and 56?

A. Yes, sir, that was the standard method of making such maps.

Q. In doing that you presumed, I assume, if those are adequate control points that those wells would drain what area, respective, approximately?

A. That depends on many factors as to how much drainage could be expected from any well.

Q. Well you used control points, approximately what area did you consider in using these various control points, that there effectiveness would extend from the well?

A. I couldn't answer a question like that.

Q. In other words to be a control point, wouldn't it necessarily follow that that particular well would have to control more or less ten acres or twenty acres area or maybe forty acres area, or else it isn't a proper control point from which to draw your contour lines.

A. No, as brought up several times before the geology and the actual production,—these are structural maps and sand thickness maps have no particular bearing on production other than the fact it is in the pool, these wells we are using for control points.

[fol. 557] Q. Well, if you think they control, what do they control?

A. They control the geology.

Q. Well, how far from the wells will it act as a control?

A. Well, the diameter of most of those holes is nine inches.

Q. You think that is as far as they will control?

A. Positively.

Q. Then your contour line don't mean much?

A. They mean quite a lot.

Q. You could have a variation in your contour line of twenty-five feet with reason?

A. Yes, sir.

Q. And so your contour line are subject to very material changes as further development may be had in the field?

A. They will be subject to changes undoubtedly but I don't think we have ever contended they wouldn't be.

Q. You would certainly say that twenty-five feet change in your contour line on a 100-foot thickness of your sand producing formation would be material, wouldn't you?

A. It would at that local point, but over the field as a whole it would probably average out, where it was higher in some places it would be low others.

Q. You have been a geologist with the Phillips Petroleum Company quite some considerable time?

A. Yes, sir.

Q. And in that respect you have tried to see that the recommendations to your management that the oil and gas leases in which your Company is interested were prop-
[fol. 558] erly protected from offset drainage, haven't you by your recommendations?

A. That is part of my duties, yes, sir.

Q. If you thought where properly lines divided leases, in order to protect that property from drainage, where your Company had a lease on some portion of the property which had been offset, would you recommend them to drill that location if you thought it would be productive of oil commercial quantities from the Medrano section?

A. Yes, sir, I believe I have letters in my files dealing with the popping of gas at Cement, I think 20-acre spacing would be very appropriate, if not denser spacing.

Q. So if you thought a well in the Medrano sand section in the various segments of the West Cement fields might drain 20 acres, it certainly would drain ten acres adequately, is that correct?

A. Well, probably from an economical standpoint that might be true.

By Mr. Williams: I object as incompetent, irrelevant, and immaterial. There is nothing in this witness' testimony that deals with a drainage,—presenting purely a geological structural picture.

Chairman Bond: You may proceed.

By Mr. Adams:

Q. Now I wonder would you step up to the blackboard again and look at Exhibit 54, referring to Prentice-B-1 well, what location is that particular lease is that well drilled, is that in ten acre location in the Northeast corner [fol. 559] of the Prentice-B lease?

A. It is in the Northeast of the Northeast of the Southwest of 6-5-9-.

Q. So that there are, with respect to property lines, three offset locations to that well, isn't that correct?

By Mr. Williams: We object as incompetent, irrelevant and immaterial as having no bearing on the particular issue involved, having no relation to this witness' direct examination at all.

By Chairman Bond: Do you contend this witness was examined, the Chief on these issues?

By Mr. Adams: If the Commission please, as a result of the geological Committee's report here, to the so-called Operator's Committee they have allocated, I mean in conjunction with the Engineering Committee, they have allocated 132,000 barrels of oil to the Amerada-McClaren lease to the East of the Prentice-B lease, then they have allocated, this maybe inaccurate because I don't have the Engineer's report in front of me, they have allocated 40 or 50,000 barrels of oil, and to the Anderson-Prichard-McClaren lease, which is the North Half of the Southeast quarter of Section 6, I think they made a very substantial allocation, I don't have the figure, but to the Anderson-Prichard-Prentice-A lease. I want to show by this cross-examination that this Anderson-Prichard-Prentice-B well [fol. 560] was drilled in 1945 at a location that if there had been oil under the Amerada-McClaren lease and if there had been oil under the Anderson-Prichard-McClaren lease there would have been substantial drainage and those operators would have ben rquired to drill those locations. Now 132,000 barrels of oil to a lease on which there is no production and on which the Operator itself hasn't seen fit to offset a producing well, I think is pretty conclusive cir-

sumstance to show that oil isn't there, in the Operator's opinion, and I think it is very pertinent cross-examination and——

By Mr. Williams: The point we make is this,—this witness has had nothing to do with the allocation of equities. He allocated no oil to these particular tracts, and hasn't testified that oil is present in any given quantities or what the Operator should do in respect of drilling. He has merely testified geologically the Medrano sand underlies that area and in his opinion as a geologist that oil is in the sand. Now as to whether an operator should or should not drill it, he hasn't testified one way or the other.

By Chairman Bond: Counsel is entitled to show inequities in allocation, but whether or not this witness is the witness to show it by,—maybe improper cross-examination to show it by this witness. Have you a witness on alloca-

[fol. 561] tions?

By Mr. Williams: We have our Engineers present who work on these allocations,—this witness dealt solely with the sand conditions and its presence.

By Chairman Bond: This witness is not competent.

By Mr. Adams: I think when the Engineer witness takes the stand he will state that the Engineering Committee based their estimate on the sand thickness as shown by the geological committee.

By Mr. Williams: As to sand thickness, we will agree to that.

By Mr. Adams: That is what the Engineer will say, you will come right back to this.

By Mr. Williams: This question has nothing to do with sand thickness,—b

By Mr. Adams: You all come out at the same place.

By Chairman Bond: Nicholas Murray Butler said an expert was a man who knew more and more about less and less. I don't want to get Counsel into position where he is getting more and more for less and less and if it is going to be any cross-examination of the witness who didn't bring out the truth the Commission will let Counsel ask this witness any question he desires with reference to those issues. Proceed.

[fol. 562] By Mr. Adams:

The Anderson-Prichard-Prentice-B-1,——

By Mr. Williams: Could we say that Exception.

By Chairman Bond: Exceptions allowed.

By the Witness:

A. As I recall at the time this well was drilled, the No. 4-A Prentice in the pattern that the Petroleum Administrator of War gave out four Cement, was, you could only drill one to the forty, it being in the Northeast ten acres, the center of the forty, for the Southwest ten acres, but only one well to a forty, so actually the 4-A Prentice from the development program at Cement would be a normal offset to the 1-B Prentice. As to why Amerada didn't see fit to drill the East offset or Anderson-Prichard's northeast offset, that is their problem.

Q. There were offsets that hadn't been drilled?

A. That is correct.

Q. You know that the war is over and any regulations of the Petroleum Administrator may have had in effect, have ceased to exist long since, you understand that?

A. Yes, other than the fact that ten acres have gone back into effect, I understand there has been an application for ten acres.

Q. I wanted to ask the Witness some questions that dealt with these *these* core analyses and with the electric log, but apparently we couldn't get any accuracy of the information we would like to have without those available.

By Mr. Williams: Who said they weren't available, counsel made that statement.

[fol. 563] By Mr. Adams: I don't know whether that is correct,—

Do you have the Core Analyses?

A. I don't have the Core Analyses, I have several electric logs, but not all of them.

Q. The Core Analyses is particularly what I wanted to ask you about Mr. Montgomery. If you can detail in the proper order one with relation to another what do you regard as the most effective evidence or the most proper

evidence from which a contour ma, of these segments involved could be prepared, what is the most accurate information first of all?

A. Well, control time electric logs verified as to interpretation, formation by samples and knowing the hole was reasonably straight.

Q. Well, of course, if cores were taken, the cores would be the most effective and the Core Analyses.

A. That wouldn't be necessary in picking the types of formation.

Q. Well, in determining what portion of the formation would be productive of oil in commercial quantities, why of course, the Core Analysis is the last word, isn't it?

A. Not always, no, sir.

Q. Not always?

A. No, sir.

Q. But if the core analyses showed that the formation had no porosity, in other words, if there were no doors or areas for the oil to pass from one porous section to another, why you would say that was pretty conclusive proof of whatever oil in place there was there wouldn't be pro-
[fol. 564] duced?

A. If that was the extent of your recoveries on the cores, you would probably never have them analized.

By Chairman Bond: If there is no objection you may offer photostatic copies in lieu of the original.

By Mr. Adams:

Q. Just before lunch you stated that your geological committee determined only the sand thickness in the Medrano sand section and not the production sand thickness, isn't that correct?

A. As to break down of the zone, shales were taken out but sandy lime, lime sand which from electric log,—I mean which from Core Analysis indicated quite a lot of permiability was included in our sand thickness.

Q. Then summarizing that, didn't I state correctly what you testified to?

A. That was my interpretation of my answer to you, yes, sir.

Q. Now, assuming you were to determine equities between the leases in this area which we are discussing, it would be necessary for you to determine the productive thickness would it not?

A. I would think that would be the next reasonable step, yes, sir.

Q. Now, would you refer to Gulf-Pell No. 1 Core Analysis, I believe you stated in your previous testimony that the core data on this well indicated some sand in this well wasn't productive because of its low permiability, isn't that correct?

A. I don't remember whether I said it was non-productive or not, I did say it did have low permiability of zero [fol. 565] as indicated by the Core Analysis.

Q. How many feet of sand as a whole, whether productive or not, did you give that well?

A. The Gulf-Pell was given twenty-eight feet.

Q. Now, from theCore Analysis isn't — a fact that that well is shown to have twelve instead of twenty-eight feet of sand with a zero of non-productive permiability?

A. It would take some time to figure up the exact footage, but that is approximately correct, yes, sir.

Q. So that while your maps show twenty-eight feet sand thickness at the location of that well, actually it should show according to your information about sixteen feet of productive sand thickness, isn't that right?

A. No, sir, that isn't the purpose of this map as was explained before.

Q. I understand, I mean if the map had been drawn to show productive sand thickness rather than purely sand thickness it then would show sixteen feet instead of twenty-eight feet as it now shows, isn't that a correct statement?

A. Well, looking over these figures as to permiability, it is hard to say what permiability from where those plugs were taken to absolutely prove they are non-productive, in that Core Analysis, and such formation on sand as though Pen-sylvanian sand, as indicated they are very tight, but they are known to produce, so it is rather difficult to say from strictly a Core Analysis that they will [fol. 566] not produce to any degree.

Q. That is the best information you have to go on about the permiability?

A. Yes, but you also know those bugaboos interpret them that way.

Q. That well came in with an originally productivity of about sixty barrels a day, did it not?

A. It was something like that.

Q. Now, that is the closest well there is to the Stephens-Pell well, I mean, that is the closest well that has a Core Analysis to the Stephens-Pell well, isn't that correct?

A. I believe that is correct, yes, sir.

Q. The Stephens-Pell well, there was no Core Analysis?

A. Not to my knowledge.

Q. What sand thickness did you give the Stephens-Pell well?

A. Seventy-three feet.

Q. And the Stephens-Pell well only made thirty barrels of oil per day?

A. It was quite small, I think that is approximately correct, yes, sir.

[fol. 567] Q. Can you explain to the Commission, Mr. Montgomery, how you would prepare a map which would show the productive sand thickness in these various segments in the west Cement area?

A. I never gave it much thought, but the normal procedure would be to arrive at some kind of a ratio and have a ratio or formula that you could write one against the other, because you don't have the same type of information on all wells.

Q. Do you think that there is enough information in the area to prepare such a map with reasonable accuracy?

A. I think so, yes, sir.

Q. Don't you think that that would more normally enact the equity of the various segments as between the various owned leases as between the separate segments as the method you followed?

A. No, because in your question, you said productive sand, your method of interpreting the equity is not productive of the well, it's how much it will make per hour, it's in the oil in place, but we produced——

Q. You didn't take in consideration the wells produced?

A. That is correct. I did not, nor did we take in account or try to tabulate the oil that was in place.

Q. Take any well with which you are familiar, Mr. Montgomery, on the Exhibit 54 and estimate from your knowledge and the information that you have with respect thereto the thickness of the productive sand section in the Medrano formation, pick out a Phillips well, you are familiar with those.

[fol. 568] Mr. Williams: There were several in the record at the last hearing.

A. If the Commission please, it was my understanding as in the way equities were determined at west Cement, other than the per cent factor, was given to different areas within different parts of the field, these were applied from electric logs because they did not try to penalize these, they had cores and had them analyzed, the other method that Mr. Adams is talking about is entirely different method of approaching the same end, although the information to do that which you have talked or asked about is not complete enough to evaluate every well in the field as far as taking an individual well and arriving at a figure like that, to answer your question, I would take all the information and I don't think that I could come out with an answer in less than one hour.

Mr. Adams continues with the Witness:

Q. Well, if you think that the best way to determine productive footage of oil bearing sand in the Medrano section in this area is by making a computation with respect to each well, don't you think that should be done, Mr. Montgomery?

A. I don't say that that is the best way, I said that was a method of approaching the same end.

Q. I thought you said that was the best way?

A. No, I said that was one of the methods of doing it.

Q. If this map, Exhibit 54, was to be drawn today, there would be changes because of developments occurring since April, 1946.

[fol. 569] A. Yes, that is because of the changes in No. 7 Sterba.

Q. Hasn't Stephens-Pell well been drilled since then?

A. Not since that date, I don't believe.

Q. I believe the original map didn't contain the Stephens-Pell well.

A. This isn't the original map.

Q. Wasn't the original map as of April, 1946?

A. No, I feel sure that the Stephens-Pell was drilled prior to the finishing of this map.

Q. Mr. Montgomery, in your experience, do you feel that you are qualified to express an opinion as to the manner in which you will procure drainage in the Medrano sand section whether it was—whether you got it from the side or whether you got it from the bottom, or whether you got it from the top, suppose a well was completed in the bottom of the Medrano section, in your opinion will that drain the oil from the bottom of the section?

A. It is a matter of opinion, that is variable, it might be by devious methods.

Q. You think that that is permeable?

A. By this dredging through the section it would drain.

Q. The information that you now have, Mr. Montgomery, hasn't the Stephens-Pell drilled subsequent to April, 1946?

A. (Attorney hands the witness an estimate.) Yes, the date of the electric log is July 12, 1946, when it was run.

Q. So at least, there has been two wells drilled since these maps were prepared?

[fol. 570] A. Yes, sir, there were other maps prepared prior to this map, subsequent to this information. As I recall, what happened to the map, I don't know whether the well was drilled before or after the well was drilled or attempted drilling, the contours were less stencil and original maps made and tracings were made after the Pell well was drilled. I know that there were some stencil marks for the contours. So, the original map was made, but the connections were made before the Stephens-Pell well.

Commissioner Weems: Any further cross-examination?

Reford Bond, Jr., examines the Witness:

Q. Mr. Montgomery, I call to your attention the Stephens-Pell lease, section 28, and I will ask you to state whether or not that lease was fully developed.

A. No, it was not fully developed.

Q. I call your attention to the Gulf-Pell lease, and ask you to state whether or not that lease was fully developed.

A. No.

Q. I call your attention to the Gulf-Sherrott lease and ask you to state if that lease was fully developed.

A. It was not developed providing the pool was continuing to go on as it was.

Q. Now then, I will call your attention to the Stephens-Sam Will lease and ask you if that lease was fully developed.

A. It's probably close to being fully developed.

Q. I call your attention to the Stephens-Gamble Brothers Wilhite being the northwest quarter of the southeast quarter of the southwest quarter of section 28 and also the [fol. 571] other three similar ten acre leases adjoining it on the east and the north, and I will ask you whether or not any of those leases are developed in the Medrano sand.

A. They are not.

Q. I will ask you if those leases are subject to drainage?

A. Yes, sir.

Q. I call your attention to the Amarado-Beemer No. 1 and ask you if that well is draining the oil from the Sherrott Gulf lease.

Mr. Williams: We want to object as this is incompetent, irrelevant and immaterial as to drainage, under this opinion——

Commissioner Weems: What is the objection, Mr. Bond?

Reford Bond, Jr.: We have as a defense, not yet filed, that the applicant has not complied with their lease contracts in that they have not fully developed and that they have not protected, that said lines has drainage and therefore have not come in equity with clean hands. The statute gives the Commission the power to determine the equity between parties, and we wish to show under the general

equity rule, which requires any applicant coming into a court of equity to come in with clean hands.

A. Equities. That is the purpose of this examination, is to attempt to establish the allocations of the applicants.

Mr. Williams: That is a lawsuit within itself. It in- [fol. 572] volves two facts. What is the lease? What is the contract of the lessee and lessor? It all goes back from any lease as filed to comply with the lease, he can attack, he talks about coming in with clean hands, this is not a court of equities, this is to prevent waste and to see that the greatest amount is recovered from the reservoir. It's a duty to recovery that regardless, it has no bearing here. The question is here, whether unitization is proper from an engineering standpoint and whether a greater amount of oil can be recovered and not settle the initial quarrels of the attornie-s of the parties.

Reford Bond, Jr.: Counsel makes his statement very nicely, however, we ask the Commission to permit us to make our proof under the issues, as they are foreign in the pleadings and whether or not it is proper to come before the Commission and for the Commission to determine as courts the extent of the jurisdiction, is also a matter not yet determined because it is due and the Supreme Court has not passed on it and I don't believe a case of this kind has ever been fully tried ever before the Commission. Therefore, we have raised in this case all of the issues that we think can be raised to protect our client's interest and we may seek to offer such proof, as in the pleadings, whether this Commission is limited or not is for the Commission to say and possible for the higher courts to say [fol. 573] if it goes there. We are merely attempting to furnish the issues and it appears to us and enacted by the Legislature, we have there in our court decisions and have no other motive whatsoever as to make the issues and make the proof on the issues.

Mr. Williams: If the party of the suit can govern the evidence, this Commission could bog*ged* down from now on to Kingdom Come and that he has pled a collateral issue, that doesn't give the right to prove it. If we go into the collateral as to prior operations, we will be here for weeks, it involves many facts. What are the provisions of the

lease contracts. Who knows what is in those leases. This unitization has been pending more than two years, many wells are depending on this. If unitization is not accomplished, then every well not drilled is a useless well and we certainly take issue of this kind of evidence. We realize that they would like for us to develop evidence to use in another lawsuit. We have evidence to ten acre spacing and they have an application for ten acre spacing and they would like to develop proof to support that application. We think that it's highly incompetent. We are here to receive the greatest amount of oil, that is the issue, if we violate the provisions, they have adequate protection, they can sue us, and we don't think that it should be done here. [fol. 574] Mr. Brown: Now, your Honor, has been on the bench for several years and I am sure that this is the first time that in your life that you ever heard anyone come into court to say that a lessee didn't comply with the obligations of the lease. That he violated the lease by not drilling enough wells. That is not in the province of the Commission. This is a regulatory body. It's vested with those conservation measures and unitization purely is a matter of law and not for a court of equity. Talk about courts of equity, you don't pretend to be a lawyer, you have been about courthouses, there is only one court of equity, that is district court at the courthouse and Federal court at the Federal building. That is the court of equity and no other court has the right to try it. They can't be brought in in any court on earth. We don't care how far that goes as long as it's dealing with any issue, but when they go clear out and they haven't complied with the terms of the lease and they should be cancelled, they haven't come in with clean hands. That is used in courts of law and I am sure this Commission doesn't want to put in a whole year as to why we haven't drilled enough wells. If we haven't we have the district courts and Federal courts, then go in there and cancel the leases. You can't give an order for damages, you can't cancel a lease for a lessee, to anything, that isn't the province of this court, it's your [fol. 575] province to see that the oil is taken care of in a way that they do not commit waste and the conservation law is observed, and the unitization question, there are

questions here that the lawyers can settle before your Honor. We don't care how much time they put in on cross-examination. We don't want to sit idly by, and they haven't done anything. That doesn't have anything to do with us here. That is the first time that you ever heard of this before, before this Commission in your experience here, and you have had lots of it.

Mr. Adams: My remarks are not in respect to this question, except by inference, I think that I would be amiss if I let the counsel for applicant's statement stand, and that is to see that inequities are voided in that the Commission determines that compulsory unitization was had. That is the first and foremost and equities is between lease from the ownerships. I think that circumstantially it is proper. I said if there were allocations of substantial amount of oil to those undeveloped tracts. It's a strange circumstance, if at all, is actually there. I think it is proper to go into that. I don't want to go into that question, I did want to make those remarks.

Reford Bond, Jr.: I appreciate the remarks of Judge Brown about courts of equities and I enjoyed them, because [fol. 576] if I wanted to go into the court of equity, I would go to Judge Brown's office and listen to him. There is no question but what the district court of the State of Oklahoma has a court of general jurisdiction and is a court of equity. There is no question but what a suit for cancellation of oil and gas leases should be properly filed in the district court of the State of Oklahoma and in the United States District Court. They have the power to require the lessee to comply with both the complied and written terms of the oil and gas leases and the failure to do so gives him time and enter an order of cancellation. There is no question about the jurisdiction of those actual leases, and I think that Judge Brown ably and correctly stated the law; however, if the Commission will, there are cases in which leases are not defaulted under the covenants of the lease cases in which leases have not fully developed the cases. There are cases where lessees have not protected the lessors on their offset drainage or on leases, sometimes owned by themselves and there is no doubt that counsel has agreed, if the fault of the lease.

[fol. 577] Vice-Chairman Weems: Do you propose to propound to this witness the same question as to other leases in the field?

Mr. Reford Bond, Jr.: Just on those leases that we believe are being drained or are not fully developed.

Vice-Chairman Weems: About how many leases do you insist on examining the witness about, Mr. Bond?

Mr. Reford Bond, Jr.: Oh, it is indicated there,—two or three.

Vice-Chairman Weems: The Commission will permit the witness to be questioned on those and will reserve ruling on the objection.

Mr. Williams: I will also reserve exception on this ruling.

Q. Mr. Montgomery, I'll ask you whether or not the No. 1 Amerada-Beemer wells drains oil from under the Gulf-Sherrit lease?

A. Well, it wasn't considered so,—the order specifies that only one well be drilled on forty acres.

Q. In your opinion does it drain oil from under it at this time?

A. Well, I couldn't say definitely.

Q. I call your attention to the Sunray-Ulery and to the Phillips-Sunray-Garrison leases and ask you whether in your opinion those leases are fully developed?

[fol. 578] A. Yes, as far as I am concerned I would say they are.

Mr. Williams: It is understood, of course, that our objection goes to this entire line of examination.

Chairman Bond: Let the records so show.

Examination by Mr. Adams:

Q. Refer back to the Palmer-Sterba No. 7,—the base of the sand was found forty feet higher than you show on your map Exhibit 56, isn't that right?

A. Approximately, yes.

Q. Wouldn't that affect your oil water contact contour line there?

A. That would change it slightly.

Q. Wouldn't it influence it?

A. It could.

Q. It raises the bottom of the pay, you mean?

A. Provided you assume that that sand thickness was the same.

Q. Is that a fair assumption?

A. No, because probably the sand is thicker going to the Southwest.

Q. You don't have any control point to the West between that and the Sterba, do you?

A. You have a direct down control between that and the Little Chief.

Q. What was the thickness in the Little Chief, in the Northwest of Section 3,—I am talking now, about the [fol. 579] Medrano sand thickness in the Little Chief?

A. We did not base the thickness on this map.

Reporters note: A recess is had, and, after such recess the Commission is again in Session and the hearing proceeds as follows.

Examination by Mr. Williams:

Q. Mr. Montgomery, you have been questioned with respect to the existence of faulting in the Medrano pool, you have,—you have been questioned about the matter of checking the water oil contact, the matter of the gas oil contact and the matter of the sand thickness,—about the various wells, the matter of contouring and as to where you placed the various contour lines on Exhibit 55, 56, and 57. I will ask you if all those matters concerning which you have been interrogated are all matters that were considered by you and by your Committee in arriving at the conclusion which you have arrived at and in the making of these maps?

A. The Geological Committee considered all facts that have been brought out in this hearing in Direct Examination and Cross-examination.

Q. With the exception of the information divulged or developed by the drilling of this Sterba well, has anything been brought out on Direct or Cross-examination that was [fol. 580] not considered by your Committee?

A. I believe we considered all the facts at hand when we made our conclusion.

Q. Has anything been developed in the result of your cross-examination that would lead you to change your opinion?

A. There has been nothing.

Q. Has there been anything brought out that would change your opinion with respect to this being the same common source of supply?

A. There has not.

Q. Has anything been brought out that would change your opinion as to the oil gas contact?

A. There has not.

Q. Has anything been brought out that would change your opinion with respect to the water-oil contact?

A. There has not.

[fol. 581] By Mr. Williams:

Q. Has anything developed as a result of your cross-examination here that would lead to change your opinion as previously expressed in this hearing?

A. There has been nothing brought out.

Q. Has anything been developed that would change your opinion with respect to this area being a single common source of supply?

A. There has not.

Q. Has anything been brought out that would change your opinion with respect to the location of the gas oil contact?

A. There has not.

Q. Is the same true with respect to the oil water contact?

A. There has not.

Q. Is the same true with respect to the contouring both in what is referred to as the East End and the Northwest end of the pool?

By Mr. Adams: We would like to object to this line of reexamination, these are all very general questions calling for conclusions. If there is some particular thing that

Counsel wishes to ask the Witness instead of asking for conclusions each time, he should do so.

By Chairman Bond: Overruled and Exceptions allowed, you may proceed.

A. There has been nothing brought out to make us change our opinions, in any way, our original interpretation of the West Medrano.

Q. That is all.

[fol. 582] By Mr. Adams:

Q. By your answer you have just given to Mr. Williams, you don't mean that the facts disclosed from the drilling of the Palmer-Sterba No. 7, that would change your opinion as to segment C?

A. It did change, yes, sir.

By Mr. Williams:

Q. To the extent you testified on cross-examination?

A. That is correct, yes, sir.

Q. Mr. Adams: As to the witness the Applicant offers here Mr. Wood, an Engineer,—at the conclusion of his testimony we asked that he produce the Engineer's report to which he referred in his testimony and we asked the Commission permission at that time to further cross-examine him when that Engineer's report was available and we would like to pursue our cross-examination of Mr. Wood at this time.

(At this time there was some discussion off the record as to Mr. Wood's not being present at this time.)

By Mr. Reford Bond, Jr.: If the Commission please, I have checked back through the record for a list of the control points testified to by Mr. Montgomery on cross-examination in connection with which he testified from and identified several Core Analyses and Electric Logs and I find that those control points that he testified about are numbered on Exhibit 54 as 9-19-22-23-24-25-41-47-74 and 29 [fol. 583] and suggest that those instruments referred to when presented by Counsel to the Reporter be marked Ex-

hibit 70-A, B, C, etc., each instrument being given a separate letter under the number 70.

By Chairman Bond: Is that agreeable?

By Mr. Williams: In line with my previous offer, that is true, it develops they have in their files they have the original instruments, they merely referred to them.

By Mr. Reford Bond, Jr.: If the Commission please, "they" doesn't refer to my clients but refers to the Palmer Oil Company and Mr. Keplinger, so I don't have Mr. Keplinger's records available, they are not mine, they belong to Mr. Keplinger and he doesn't represent any of my clients, so I trust our agreements will still stand, Mr. Williams.

By Mr. Williams: We will furnish them.

By Chairman Bond: You furnish them,—very well the Commission will respect your agreement.

[fol. 584] Mr. Herman Kaveler, having been sworn and being called, testified in answer to the interrogatories propounded as follows:

Further Cross-examination.

By Mr. Adams:

Q. You are the same Herman Kaveler who previously testified in this matter?

A. I am.

Q. You were one of the members of the so-called Operators Committee?

A. I was a member of the Operators Committee representing the Phillips Petroleum Company and acting as Chairman of the group.

Q. Now, you had available to you, before you submitted the Plan which has been submitted to the Commission, both the report from the so-called Geological Committee and the so-called Engineering Committee, isn't that correct?

A. I have all of the reports before me that were submitted by any of the sub-committees of the Operator's Committee.

Q. Well, will you answer the question, did you have, you can answer my question using yes or no and we will save a little time, did you have a report from what you wished to term an Engineers Committee?

A. I did have such report from the Engineers Committee.

Q. Do you have it available?

A. If you know which report you have in mind, I have it available,—which report do you refer to.

[fol. 585] Q. I don't know, if you have more than one, will you produce all of the report?

A. Your technical advisor was supplied with all of the reports of the Committee,—I didn't continue to carry them with me,—this one that was prepared and identified "A Reservoir Study of the West Cement Medrano Pool" under date of May 27, 1946,—and there is some free advertising on the part of the Gulf on the cover.

Q. Is this the only Engineer's report which your so-called Operators Committee had?

A. I believe it is, yes, sir.

Q. Handing you Exhibit 71, will you please identify that exhibit?

A. Exhibit 71 is a report entitled "Reservoir Study of the West Cement Medrano Pool by Engineering sub-committee composed of A. C. Godbold, Chairman of the Gulf Corporation, C. H. Dankerson, Amerada Petroleum Corporation, and Gilbert Woods, Jr., Phillips Petroleum Company, dated May 27, 1946".

By Mr. Adams: I would like to offer in evidence Exhibit 71.

By Chairman Bond: Received.

By Mr. Adams:

Q. Whose idea was it to make an effort to Unitize what you wished to term the West Cement Medrano Pool?

A. A majority of the operators in the West Cement Medrano Pool at a meeting decided that the conservation of the pool should be attempted.

Q. Just answer the question. Let's don't go into a lecture, who was it that decided this?

[fol. 586] A. A majority of the operators of the Cement Medrano pool decided that Unitization was the most conservative way to produce the pool.

By Mr. Adams: We asked the latter part of the Witness's answer be stricken as not responsive.

By Chairman Bond: Overruled, Exception allowed.

By Mr. Adams:

Q. When was that?

A. As I recall, without referring to my notes the first meeting was held on or about August 1945.

Q. Who called this first meeting?

A. The first meeting was called by C. P. Dimit, Vice-President of Phillips Petroleum at the request of a number of the Operators with whom he had consulted.

Q. Then the so-called Operators Committee appointed a member of a sub-committee for Engineering and a sub-committee for a geological report within their own organization, is that right?

A. That is correct, yes, sir.

Q. Now, did your Operators Committee wait until these sub-committees reported to it before proceeding further?

A. The Operators Committee met frequently in conference with the sub-committees and followed the progress of the work that they were given to do.

Q. You directed what work they should do?

A. Now,—

Q. You were the Chairman?

A. I directed the work insofar as I was charged with the responsibility in carrying out the wishes of the Op-
[fol. 587] erators Committee.

Q. You told the geological committee what you wanted them to do didn't you?

A. I told the Operators Committee what it was to do, yes, sir.

Q. You told the Engineers sub-committee what you wanted them to do?

A. I told them what the Operators sub-committee, what they wanted to do.

Q. Did they submit to you a tentative report in writing before they submitted offered in evidence?

A. The two sub-committees submitted numerous reports, some in writing and some in at speakings held in the working of the committee.

Q. Have you produced here all of the written reports which were made by the Operators Committee to each of the two sub-committees?

A. I will have to check the records.

Q. Will you do that?

A. Yes, sir.

Q. If there are other reports than the maps which have been submitted by representatives of the geological committee or Exhibit 71, will you produce them?

A. Yes, I suppose you are inquiring about the reports that were adopted by the Operators Committee.

Q. We would like to have all of the reports.

A. I am sure that I have in my files all the reports that were adopted by the Operators Committee and I will be glad to produce them.

[fol. 588] Q. Might we have them in the morning?

A. I think so.

Q. Do you know how many wells there are drilled in the various segments in what is known as the West Cement Mendrano field in Caddo County, Oklahoma?

A. I don't have a breakdown of the number of wells by the segments to which you refer, but at the present time it is the common source of supply there are 19 gas wells and 32 oil wells.

Q. You mean they were of that differential at the time of the original production?

A. Yes, sir, I beg your pardon, that is the present classification of wells under the order of the Commission.

Q. Do you know how many of those wells that were oil wells are now either wholly gas wells or are making a high percentage of gas.

A. There are now four wells classified as gas wells which were originally classified as oil wells.

Q. How many wells are there that were classified as oil wells that are now classified as gas wells or making a high percentage of gas, if you know.

A. Answer, well, there are four wells now classified as gas wells which were originally classified as oil wells.

Q. Then, there are no wells that were originally classified as gas wells that are now classified as oil wells?

A. I don't believe there is, no, sir.

[fol. 589] Q. How many of the wells that were completed as gas wells that are now abandoned that were productive of either oil or gas?

A. The present number of wells in which the Medrano is plugged off and productive from other horizons, is one.

Q. Was that originally a gas well?

A. I believe that was originally an oil well, if my memory serves me correctly.

Q. The Anderson-Prichard-Hay?

A. That was a gas well,—my attention is called to the fact on the Magnolia-Edwards tract in Section 1, on Exhibit 54, there is marked a Magnolia-Edwards 4, which I am told was tested for gas in the Medrano and was subsequently plugged.

Q. The testimony which you have given in this case, or in this hearing so far was based on your own opinion or is it based on someone else's opinion which was given to you?

A. Based on my own information.

Q. You stated you were told,—I wondered if this was your own opinion or if it was based on someone else's opinion?

A. My memory was refreshed.

Q. Now you stated that there was salt water below the oil formation and that in some of the wells water was moving up into the oil zone, can you tell us what wells you had reference to?

A. At the last hearing, or the last session of this hearing, we gave you a tabulation of the water percentages, I can't seem to lay my hands on it right at present, but generally speaking there are wells along the structurally lowest part of the pool which are now producing water,— [fol. 590] I don't seem to be able to put my hands on the tabulation which we gave you, perhaps Mr. Keplinger can loan that information back to me.

Q. To refresh your recollection, there are a number of wells in segment A & B are there not, in which a high percentage of water is being made with the oil production?

A. The 1947 production gas-oil ratio tests indicated that for example, the Amerada-Hartshorne No. 2 on February 5, 1947 produced 34 barrels of water and 78 barrels of oil. The next highest water production and I note on this tabulation is in the instance of the Anderson-Prichard, this says Clyde Pickard No. 1, which produced 54 barrels of oil and 42 barrels of water on July '47.

Q. What about the Phillips-Margaret well?

A. The Phillips-Margaret Hollard No. 1 on February 5, 1947 produced 208 barrels of oil and ten percent water, those appeared to be the highest water producing wells.

Q. The fact that oil wells, four oil wells have gone to gas, one gas well has ceased to produce either oil or gas, and therefore has been plugged, and the water appears to be coming into the wells from below wouldn't that indicate that there is a substantial water drive with respect to the production from the Medrano sand formation?

A. No, sir.

Q. It wouldn't to you, in other words, that is your opinion?

A. It wouldn't to me and it is my opinion and in the mind of any reasonable engineer it would not.

[fol. 591] By Mr. Adams: We object to the latter part and that it be stricken.

By Chairman Bond: Objection sustained, don't argue with the Witness unless you expect him to answer you.

By Mr. Adams:

Q. How many gas wells, Mr. Kaveler, does Phillips Petroleum Company have in the various segments here under consideration?

A. The Phillips Petroleum Company owns four halfs and interest in the following wells:

Q. Could you number them without reading the names?

A. In tract 28, is that s sufficient number which refers to one of the exhibits in Tract 28, in Tract 18, and in Tract 27, 71, Tract 25, and Tract 26, and I think I neglected tract 29.

Q. Are all of those numbers shown on Exhibit 54?

A. No, sir, it isn't shown.

Q. I mean what are you referring to, to get those tract numbers?

A. The tract in the proposed unit, are the tract numbers shown on Exhibit 24.

Q. You have figured you have wells in those tracts, how many of the total gas wells in the various segments that Phillips Petroleum Company either owns or owns an interest in?

A. If I knew how you wanted the answer I would be glad to give them to you.

Q. Count them by number, how many, take segment A, let's go at it by segment?

A. In your segment A, Phillips Petroleum Company has an interest in the Fletcher which is Tract No. 18, on which [fol. 592] there is a gas well.

By Mr. Williams: 24 don't show segments.

By the Witness:

A. I would like to strike the reply and start over, in your segment, you referred to as Segment A, Phillips Petroleum Company has no interest in a gas well. In your reference to Segment B Phillips Petroleum Company has a fifty percent interest in the Phillips-Sun Ray-Dixon and in the Phillips-Farr Well-4 and in the Phillips-Oaks-1 and in the Phillips-Fletcher-5. In the segment you refer to as C, Phillips Petroleum has no gas wells nor do they have any interest in gas wells in segment D or your segment E.

Q. You have read the Engineer's sub-committee report?

A. I believe so, yes, sir.

Q. You referred to our Segment, A, B, C, D, and E, you realize that your Engineers sub-committee report is based on segments?

A. Yes, sir, they used that nomenclature for convenience.

Q. For convenience?

A. I suppose they did, they used it.

Q. The Engineers report is supposed to be based on facts?

A. It is, it is based on convenient facts.

Q. The only segment you have gas wells is segment B, is that correct?

A. I think that is correct, Mr. Adams.

Q. Now, have you operated those gas wells like you told the Commission they should be operated or have you sold [fol. 593] for gas there that was necessary to sell to keep the pressure differentials between the oil bearing and the gas bearing horizon equalized?

A. We produced the allowables permitted by the Corporation Commission, granted those wells.

Q. You don't answer the question.

A. We do and deliver to our lessors in the instances of those gas wells and we produce allowables as set by the Corporation Commission.

Q. You still haven't answered the question?

A. It has always been Phillips Petroleum Company opinion that the production of gas exclusively from that pool was detrimental to the greatest ultimate recovery of both oil and gas.

Q. But you don't follow that in your own operations?

A. We weren't permitted to do that?

Q. You mean if there is an allowable granted for gas that you must run it?

A. Yes, because I am afraid certain lawyers might be employed to sue us for not living up to the obligation to our lessors.

Q. Did you make application to the Commission to change the oil-gas ratio?

A. We have on frequent occasions recommended to the Corporation Commission that the gas wells be reduced substantially in allowables.

Q. Did they turn down your application?

[fol. 594] A. The Commission granted the substantial reduction in gas allowable to its present value and I understand that there is an application on file to further reduce the allowable and Phillips Petroleum Company will join the applicants.

Q. You testified that you are in charge of production of Phillips Petroleum Company.

A. I don't have the honor of that.

Q. Aren't you the assistant to the man in charge?

A. I am.

Q. Will you tell the Commission of any application that Phillips Petroleum Company has made to this Commission to change the gas-oil ratio, to change your advice to conform to your theories and that the application was denied.

A. Phillips Petroleum Company has always got an application for the reduction of gas allowable.

Q. You haven't answered the question.

A. We supported the application of 2,000 to 1 on oil wells in the hearing after which the Commission issued its present order containing that present provision.

Q. They you don't know of any application which you have made to change the oil-gas ratio in this particular area, which has been denied by the Commission.

A. No, I know of none that we have made that has been denied.

Q. Okeh, Mr. Kaveler, on direct examination you elaborated in some detail about the plan here proposed and made many statements of opinion in respect to the reserves that [fol. 595] might be obtained of such plan, I would like for you to state for the Commission whether or not in your opinion thus expressed as the result of information given you by the geologists' sub-committee and engineering sub-committee, which was joined by your operative committee.

A. I think that in the testimony to which you refer, I testified that originally there were 96 million barrels of oil.

Q. I am not asking you to repeat that, I am asking you if you will state your opinions.

A. Did you refer to the statement where I testified there were 96 million barrels of oil in the reservoir?

Q. You stated many opinions without repeating, did you regard and rely on the sub-committee's geologists report and the sub-committee of engineering report in forming your opinion?

A. I relied on the report of the geologist's committee and the engineering committee's report to the extent that I personally examined the results that they obtained and reported that examination of the data to the extent that I

felt I had personal knowledge of all the factors as based on any statements.

Q. Do you, in any respect, disagree on the report or recommendations of the sub-committees?

A. Not substantially, no, sir.

Q. In which of the segments—Phillips Petroleum have the most of the biggest stock, so to speak, in estimated oil in place in the Medrano sands.

[fol. 596] A. My examination of Exhibit 54 is that the Phillips Petroleum Company's main holdings in the common source of supply in the main area designates the segments to be——

Q. You interposed the statement, the common source of supply we seek and ask that that be stricken as not responsive to the question.

Chairman Bond: Sustained.

Mr. Adams continues with the Witness:

Q. There are 13 producing gas wells in Segment B?

A. I suppose so, that appears to be.

Q. There are more producing gas wells in Segment B than any other segment?

A. Yes, sir.

Q. So if you can put a cap on the gas wells that Phillips Petroleum Company has, the result will be that they will gain more than any other operator in the field?

A. Yes, and we think that if it's possible to cap them, it will be the thing to do.

Q. Mr. Kaveler, on direct examination, it's my recollection that you testified that by the recycling or injection of gas, it will permit, in your opinion, the recovery of an additional 50 per cent of oil in place, while the engineer's report, which was prepared by the engineers in your own company, and in certain of the other companies to which you referred, showed a participating factor of only 35.2 per cent, why did you change from the 50 per cent to the 35.2 per cent of recovery oil in place in preparing the final [fol. 597] participating factors?

A. I think that the answer to that question centered upon this situation, 35½ per cent factor was used to compile

the recoverable oil beneath each lease for the purpose of arriving at the distribution of equities in the proposed unit. That does not have any direct bearing on the ultimate recovery to be had from the pool, for this reason that 35½ per cent factor, that was applied to oil originally in place beneath each lease, is a factor which in the opinion of the operators measured the recoverable oil that will lie beneath each lease in the absence of unitization, so that the unit has equity, as designed to give to each contractor in proportion to that contraction to the unit, so that estimates that will ultimately be recovered from the pool as a whole, do not necessarily bear any direct act of the 35½ per cent for equity.

Q. You just thought that the engineer's report was inaccurate and it would look better to make it 50 per cent than 35½ per cent.

A. The engineers used 35½ per cent because that was an equity. The amount that they gave to the Commission concludes, could be recovered an additional, had nothing to do with the computation, it simply reflected how much, in my opinion, could be recovered if possible.

Q. I think that possibly you are confused a little, I believe the engineers' report showd 50 per cent and you used 35.2 per cent factor.

Chairman Bond: The Commission will recess until ten o'clock in the morning.

[fol. 598] H. H. KAVELER Recalled on Cross-examination,——

By Mr. Adams:

Q. Mr. Kaveler, yesterday afternoon we asked you to produce any report, maps, or whatnot submitted to you by the Engineer or Geological Committee which had not heretofore been put in evidence,—do you have any such instruments?

A. The only report returned by the Engineering Committee is Exhibit 71, which was introduced yesterday,—the only Geological report that was submitted to the Opera-

tor's Committee were those reports which Mr. Montgomery offered,—I believe you have everything in the case, all the reports in the case, and I believe that Mr. Tom Palmer has received all the reports of the Committee, as a member of the Operator's Committee.

Q. Mr. Kaveler, you understand what we want here is to present to the Commission all the facts, and all of the reports of every nature and any other instruments that were received by the Geological Committee, or the Engineering or the Operator's Committee and for that reason and that reason only we would like to have you produce any instrument that hasn't been produced?

A. The instruments to which you refer, to my best information, are all in evidence.

Q. Well, do you have a copy of the,—I believe Exhibit 71 is the number, the Engineer's report, do you have that before you.

A. Yes.

Q. Will you refer to page 5 of Exhibit 71, sub-paragraph C, which is, (reading) "work of the sub-committee:

1. Isopachous Maps. The Isopachous Maps of the Oil [fol. 599] and Gas Zones, as prepared by the Geological sub-Committee, were used to determine total sand volume in each zone for each lease," I take it those are Exhibits 54 and 55?

A. No, 56 and 57.

Q. Now, on page 5 of Exhibit 71, No. 2-Isobaric Map,—is that Isobaric map in evidence?

A. I don't know whether that one is or not. I'll have to check that.

Q. Well, I would like to have you get that map,—do you have it Mr. Wood? (Addressing Mr. Wood who is in the Court Room.)

Mr. Wood: Not with me.

Mr. Adams: Well, I would like to have it during the examination of Mr. Kaveler.

Reporter's Note: At this point Counsel who is examining the witness is handed a map, which map is by Counsel handed to the witness.

Q. Mr. Kaveler, I hand you what has been identified by the Reporter as Exhibit 72, which is,—will you please state what that is?

A. Exhibit 72 is called an Isobaric Map, which reflects the reservoir pressures, taken by some of the operator's staff, the Palmer Oil Company, in the month of November, 1945.

Mr. Adams: We offer in evidence Exhibit 72.

Chairman Bond: Received.

[fol. 600] Mr. Reford Bond, Jr.: I understand that is offered as a part of the Cross Examination of this witness.

[fol. 601] By Mr. Adams: That's right.

By Mr. Reford Bond, Jr.: So it will not be binding on the Protestant.

By Chairman Bond: The Commission understands Counsel correctly, the Witness based part of his testimony on this map.

By Mr. Adams: That is correct.

By Chairman Bond: You desire the map offered in testimony because he based part of his testimony on it and you want to cross examine him on it.

By Mr. Adams: I want the whole thing in the record.

By Chairman Bond: Very well.

By Mr. Adams:

Q. Were the pressures taken in November 1945 on pumping wells?

A. They were.

Q. Mr. Kaveler, I would kinda like you to testify,—I will call Mr. Woods to the stand, I mean if you would have to be coached by him, I would rather,——

A. I was trying to save you a little time, I could look those up in my notes.

Q. You are sure about the pressures being taken on all pumping wells?

A. I am, except the Palmer Oil Company, if they have to have pumping wells, the Palmer Oil Company wouldn't cooperate in the survey.

Q. That is your conclusion?

[fol. 602] A. That is my knowledge, yes, sir.

Q. That is your conclusion?

A. That is my knowledge.

Q. Now, to get back to your theory, I understood you were Vice-President of Phillips Petroleum Company?

A. Mr. Adams, I answered that question yesterday,—I am reluctant to sit here and be chided by you.

Q. I am not attempting to chide you sir, I thought you said you were?

A. In the face of your constantly failing memory, I decline to answer your question.

By Mr. Williams: Go ahead and answer his question.

A. I am Assistant to the Vice-President of the Phillips Petroleum Company.

By Mr. Adams:

Q. You appear here as a representative of Phillips Petroleum?

A. Yes, sir, and as Chairman of the Operating Committee of the West Cement Medrano Operators.

Q. You mean the Applicants in this proceeding, and you don't propose to represent all of the Operators in the field, you propose to represent those who are seeking to have this application approved?

A. Those are the Operators who are applicants, yes, sir.

Q. Now, someone devised the theory on which the evidence to support this application was to be prepared,—did you do that?

A. I did it as a representative of Phillips Petroleum Company participating in the deliberations of the Operators Committee.

[fol. 603] Q. And the theory on which this material has been prepared is to attempt to reconstruct these various segments as they were prior to any production of oil or gas and then to deduct from each lease or charge each lease rather, with any such production, generally is that a correct statement?

A. In a limited extent, Mr. Adams, that is a partial statement of the principals followed in the division of the equities.

Q. Well, isn't that a true statement with reference to assigning of oil or gas in place of value presently to each of the leaseholds involved with respect to that one element in the Plan?

A. Yes, so far as it applied to that element, insofar as that one element is,—it is a partial statement of the entire plan, that is correct.

Q. Now, this producing horizon is a more or less a relatively porous sand formation, is it not?

A. Yes, sir.

Q. Would one well in the area, for instance, between, will one well of the particular segment ultimately drain all of the oil from that particular segment of the Medrano sand formation?

A. The answer to that question in my opinion is generally "yes".

Q. So that you have both a lateral and vertical drainage in the sand zone, isn't that correct?

A. Yes, sir, you have drainage in all directions.

Q. Now only a portion of the oil and gas leases in each of the segments have been developed, that is correct isn't [fol. 604] it, in the horizon in which we are interested?

A. That depends upon, Mr. Adams, you attach to the word "developed". There have been wells drilled on a majority of the tracts in the field, if you mean by that they are developed, the answer "that substantially all of the tracts have been developed".

Q. What I mean there are oil and gas leases, for instance, in segment "a" on which there has been no development, isn't that correct?

A. Yes, there are some tracts lying within the proposed unit boundary in which no well has been drilled, such tract is the Stephens Petroleum Company-Brown and the Stephens-Dome-Bo.

Q. There is several small tracts?

A. Yes, sir.

Q. When I say tracts, I mean separate oil and gas leases by property lines, is that what you mean?

A. I suppose, I think that is what I mean, I will adopt that meaning.

Q. Now does that same situation exist, maybe not to such extent, in the other segments, I mean segments other than segment A?

A. There are tracts in the other segments a part of which tracts which lie within this proposed boundary on which no well has been drilled. I refer particularly to Tract No. 33 on Exhibit 24 which is identified on Exhibit No. 54 as the Gulf-Holland Tract in Section 2 and I now point to it.

Q. Now, there are also separate oil and gas leaseholds in each of the segments, were they not, which were not fully developed but on which there is some production being had [fol. 605] from the Medrano sand formation.

A. I cannot answer your question completely, I don't know what you mean by "fully developed".

Q. Maybe that isn't a good question, I mean where all drilling locations which would be normally developed, have been drilled?

A. In my opinion any forty acre tract that has a well on it is normally and fully developed.

Q. But if there are forty-acre tracts in any leasehold on which there is no development then you regard that particular lease as not being fully developed?

A. If it lies within the oil zone?

Q. Yes, that is what I mean, now wherein in this Plan would you propose do you take into consideration the drainage from one lease and across property lines to another lease in determining the present oil or gas in place under each of the oil or gas leases in each of the segments in the Plan proposed?

A. I don't know whether I can answer that question directly, Mr. Adams, but in the Plan proposed, the objective of the Plan is to give credit,—the objective is to give credit in the Unit in proposition to the amount of oil and gas that each separately owned tract contributes to the Unit. Now, it is undoubtedly that due to the step-wise development in this pool some migration has occurred onto the area of Palmer Oil Company from some other crack, and there maybe migration off of the Palmer Oil Company onto some other tract and that migration which you seek to question me about is practically an undeterminable [fol. 606] quantity as between tracts. The best and only

approach that could be made to estimate the effect of that migration is to follow the procedure that was followed in developing the plan of Unitization here developed wherein the amount of gas that is resident beneath each tract that is measured by the sand thickness and the reservoir pressure existing in November 1945, the most recent date available to us, so that there can be no substantial argument that any migration that did occur within the gas bearing portion of this reservoir was very substantially accounted for in the Plan of Unitization and compensated those who were able to drain gas from other leases. Now in respect to measuring the contribution of each tract in respect to the oil contributed, the steps involved were these,—the amount of sand thickness lying beneath each separately owned tract was determined, the original water-oil contact, and the original gas-oil contact were determined, the porosity of the sand was determined, and the characteristics of the oil as it lay in the sand were determined, and with that information, as I have previously testified in this case it was possible to determine with a reliable degree of accuracy how much oil lay beneath all these separately owned tracts at the time that this pool was discovered, the pool in its native state, then to measure how much recoverable oil will remain beneath those tracts, about 35½ per cent recovery figure was applied to the oil initially present. That gave the so-called primary pressure depreciant reserve. From that original reserve, that native reserve, that reserve that was native to each lease in the [fol. 607] very beginning, from that was subtracted the oil production, that was stepped to obtain the measure, how much oil each of these separately owned tracts contributed to the Unit. A further measure of how much oil each separately owned tract contributed to the Unit was taken into account in the so-called current income factor, which occupies 20 per cent of the formula which I think we have adequately compensated all the gas leases for all the drainage that may have occurred. I think we have come as near as humanly possible to give compensation to each and every lease for any migration of oil that might have occurred and for migration that occurred on the Palmer-Sterba lease in respect to the drainage that Palmer may

have encountered by drilling his wells only to 6000 feet was adequately compensated for in the Uni-zation Plan as presented.

Q. Understand I appreciate that a lease which is fully developed would have on your,—under the Plan which you proposed but actually you have not even taken into consideration in this Plan any uncompensated drainage, and of course if any lease was not developed it would not have compensated drainage?

A. If the lease was not developed, it may have lost some oil by drainage but a lease which has been *d*ully developed over the previous years,——

Q. Would gain by it?

A. No, sir, not at all. You must bear in mind that a leas*t* that has no well on it whatever got full credit in this Unitization for the oil that originally lay under it and the lease that was, using your phrase "highly developed" [fol. 608] those highly developed leases were reduced in the oil contribution by the amount of production that had been had to date, so the age was not applied to developed leases.

Q. When you say there is an advantage or disadvantage, you mean,——

A. I didn't say there was an advantage or disadvantage.

Q. When you say there is an advantage or disadvantage, what you mean, is that there would be no advantage or disadvantage if the field was placed in its original position, you understand do you not if this application is to have any force and effect it is supposed to relate to the field as it was and is of the date it goes into effect?

A. I don't speak in terms of advantages and disadvantages and I also understand from my legal counsel that this Unitization must be and has a basis, and I further state in our Unitization, so far as equitable contribution is concerned must take into account this basis for dividing oil among the contributors in *por*portion to the contribution they are making at this time.

Q. But if you had two barrels of oil side by side, you had inter-communication between those two barrels, one representing one lease and one representing the other, and

you pumped oil out of one barrel but you didn't pump any oil out of the other, suppose both barrels were full originally, then five or six years later after a moderate pumping out of one barrel then you go back to the theory on which this appl-cation is made, is that both barrels here [fol. 609] assumed, without any drainage from one to the other contribute the same to the Unit, now isn't that correct?

A. Of course, it is a debatable point.

Q. Isn't that right?

A. In my opinion, it is not right.

Q. Tell us why it isn't, according to the way this Plan is submitted?

A. We will indulge in some speculation as suggested. I draw on the blackboard a lease, a rectangle "A" and a rectangle "D", you propose that there were two barrels under A and two barrels under B to begin with and that A and B are connected at the common source of supply as it is in Medrano,—Lease B had production from it and you used another figure, let us suppose there was half a barrel produced from Lease B and for some reason or other the well wasn't drilled on "A" so that A is not developed to any extent. Now the mechanics of treating those two leases under the Plan of Unitization generally follows,—the same thickness calculation permits us to compute and find that there were originally in back to two barrels under A and two barrels under B,—then the Plan of Unitization says that the primary reserve of lease "A" at 35½ per cent of two barrels or .701 barrels of oil and the same would apply to B. B would have .701 barrels of oil reserve in the reservoir in its native state. The Plan further says that the contribution that B is going to make to the operation is .7 of a barrel of its original reserve minus .5 of a barrel so that the reserve contributed by lease A,—I beg your pardon,—.5 of the barrel that is produced from [fol. 610] lease B, so that now the *the* purpose of computing equities, lease B shall be regarded as having .7 of a barrel of reserve, and lease A shall be regarded as having 2 barrels of reserve, each of those number of barrels thus determined were the barrels used as the oil contribution.

Q. Irrespective of the fact that by draining from tract

A to Tract B which was developed according to the testimony the oil in each of those two tracts would remain equal as long as production was from tract B, is that correct, as of date?

A. That is going on the primary assumption that you made that there was substantial migration between A and B.

Q. There would be, you did testify there would be.

A. In my opinion, there wasn't a substantial migration in this pool except in the gas area.

Q. What was the permiability?

A. Average about 300 as I remember.

Q. Is that high or low?

A. That is, well I would say, that is moderately high,—shows a very high quality of oil sand.

Q. In any respect the theory you are advancing here penalizes the man who developed the lease in favor of the man who didn't develop the lease?

A. I didn't limit the sands, I think one could say that,——

Q. What information did you have, your so-called Operators Committee with respect to porosity in the various [fol. 611] segments here involved?

A. Before I answer that question, I would like to add on to my statement to the preceding question, I didn't give you a complete answer,—I in my answer about the present point, I detailed to you had the equity for tract A and for Tract B was credited in terms of oil reserve of each of those tracts but the Plan sets out that the equity finally shall depend to an extent of only 80 per cent shall be weighted for reserve, 20 per cent for the credit given to a tract shall be credited for current income, so that tracts B under the current income factor will receive credit for its daily production, whatever that may be, up to the allowable set by the Commission but not in excess to the allowable set by the Commission. Tract A with no well on it will receive no credit in 20 per cent of the formula for current income, so that whereas you referred a few minutes ago to the penalty that a man would suffer for having a developed tract there is a compensation here, if you wish to regard that as penalty, a compensation in

terms of daily income as a reward for having developed the tract. Now to answer the question put to me,—the Operators Committee had the porosity dated to the extent of the character which we supplied you on previous occasions.

Q. You mean the core analyses?

A. Yes, sir, and that was the information which we bandied about here yesterday.

Q. And referring to the Engineers report in Exhibit 71, again, you assumed did you not, a uniform porosity of 17 [fol. 612] percent in each of the segments here involved, possible it is in the Plan?

A. It is probably in that report.

Q. It is Table "9" in the Engineers report.

A. I think that porosity data is summarized in Table "9", Exhibit 71.

Q. In other words, you assumed an almost uniform porosity in the five segments here involved as reflected by Table "A"?

A. Yes, sir, but I see nothing alarming about that.

Q. You heard the testimony of Mr. Montgomery when he was cross examined about these Core Analyses?

A. Yes, sir, I did.

Q. Have you reviewed those Core Analyses yourself?

A. Yes, sir.

Q. You think that the average porosity of the Gulf-Pell well is 15 per cent?

A. I think the average porosity,——

Q. Just answer the question.

A. I think the average porosity of the segment is 15 per cent, which you read from Table "9".

Q. Do you think the average porosity of the Gulf-Pell is 15 per cent?

A. The average porosity of the Gulf-Pell well is about 13.3 per cent.

Q. Assuming that calculation is correct, that would be giving that lease a credit of 10 percent of the porosity [fol. 613] which was granted to that segment wouldn't it, ten per cent or fifteen per cent?

A. I don't follow your arithmetic.

Q. If it is 13.3, you give it 15, that is 1.8 per cent which is more than 10 percent of your 15 percent?

A. I think that is approximately correct.

Q. You think that is all right do you?

A. Yes, sir, I would like to tell you why if you are interested in knowing.

Q. I am interested in the Commission knowing.

A. I will answer the question this way.

Q. If you have a good excuse, let's refer to effective pay.

A. I am going to refer to the question you asked. The Gulf-Pell is probably an 8-inch hole drilled in the earth. A core is removed from the 8-inch hole and the core is about that size (indicating) or a little larger. That 8-inch hole, some of the rock was cut from it and it was analized and found to have a porosity of about 13.3 per cent.

[fol. 614] (Reporter's note: The following answer is a continuation of the answer of witness Kaveler found on the previous page.)

Mr. Adams is examining the Witness:

A. No other wells, the Gulf-Sherrett 2, 3, and 4 had similar pieces of logs cut from them and the porosity in the Gulf-Sherrett 1, 2, 3, and 4 is as follows:

Sherrett No. 1	14.2%
Sherrett No. 2	15.3%
Sherrett No. 3	15.25%
Sherrett No. 4	14.5%

So, you see, uniformly, your attention is directed to the lower porosity of that segment. The problem is not to determine the porosity in one spot, but to determine the porosity of the lake over a quite large area, that is Segment F, and to pick one porosity from observation over this area and in the face of the evidence, there is a substantial variation that some have all the values ranging around the figure of 15%. The average of this is 15%, is a well established principle that the character of this sandstone

varies, there is always some variation in nature from place to place and that variation occurs immediately to pass from Pell No. 1. If we all knew the porosity immediately beyond the bore hole, it might be 15% and it might be 12%, the variation might be reflected from the sand positions in that area. When a person grades a pool of content, the content is not reduced and the numerous samples are removed from the pool and that is taken in that manner. It's the same way in the core analysis, 1, 2, 3, 4, 5, and analyses are made.

[fol. 615] Q. Although, as you went west in Segment A, the porosity was increased?

A. Yes, and that was in this manner.

Q. I will get to that in a minute. The plan proposes that Phillips Petroleum Company will be the operator, doesn't it?

A. Yes, sir.

Q. And the plan proposes the drilling of seven additional oil wells or wells into the oil bearing section into the Medrano sand?

A. I don't know, I will have to refresh my memory, I think at lease seven more wells.

Q. The plan says seven wells. I would like you to designate on Exhibit 54 the locations which you have chosen for those proposed seven additional oil wells to be drilled in the Medrano oil bearing section.

A. I draw on Exhibit 54 in the vicinity of the oil-water contact, a wavy line on the structure. The wavy line is in red pencil and state that, in my opinion, any future oil wells drilled will be on that line, for the reason that gas injection and pressure maintenance will be effective and the operators will have opportunity to push oil down here and produce oil, it should be in conformance to that plan and these wells will have to lie to the lower structure points.

Mr. Adams: That is not my question, Miss Reporter, will you please read him the question.

A. In my opinion these wells will be drilled in the confines [fol. 616] of the red wavy lines on Exhibit 54, which wavy line lies at the lowest structure of the horizon.

Q. Can't you answer the question?

A. I did.

Q. You said that there were going to be seven?

A. The unit was formed——

Q. I hope that you answer my question, you have told the Commission that there were seven, now will you pick out the definite, number you must tell where they will be put.

A. I testified at least seven. There may be, in my opinion, more than seven wells.

Q. Don't you have an idea as to the location?

A. The location is immaterial, because in property lines within this unit as to whether the well is drilled on what was originally known as Gulf-Sherrett lease, it might be at that point, there is no sense in stating the distance of the line.

Mr. Williams: Have any exact locations been designated yet?

A. No need for it, no.

Mr. Adams continues with the Witness:

Q. Do you propose to drill any such well in Segment A?

A. I imagine that they might. There are three located wells that may be one furtherest to the west, in Section 29.

Q. Do you propose to drill any second well in Segment B?

A. Yes, sir.

Q. Segment C?

A. Yes, and Segments D and E.

[fol. 617] Q. But you don't know where at this time?

A. It's not important to know where.

Q. If, when the wells are drilled, they disclose information which will reflect gross inequities in this proposed plan, do you propose then to collect these inequities?

A. If they are as a gross as you put them, it is a legal question, if you want my opinion, I will give it to you.

Q. Under the plan, as committed, there is no way to correct inequities, is there?

A. There is no provision in there and I have confidence in recommending that plan as it stands for the reason that this pool is so fully developed that it's highly impermeable, that these proceedings will not show a minor gross inequity.

Q. You say, you talk about the so-called operator's committee, how many deals did you make as a representative of Phillips Petroleum Company, with the other operators to get them to join you?

A. None.

Q. Isn't it a fact that in order to secure a joiner of Anderson Prichard with your company in this application, that you made an arrangement with them to give it 20% credit to present day income?

A. I am not aware of any such imputation of said 20 per cent.

Q. Isn't that a fact?

A. You refer to it as a deal, I am not familiar with it as that.

Q. Well, look at exhibit 53.

Mr. Brown: One of the faults of the question that he is [fol. 618] trying to propound to Mr. Kaveler, is that he made a deal with Anderson-Prichard to join in the application and he attempts to refer to an exhibit to show that there was a deal made with Anderson-Prichard. It is not proper to assume that there was a deal made if there was something in the exhibit in order to be fair, there is an adjustment of equities, there were no dealings as far as that is concerned with anybody. They worked out and everybody had equities and everyone got consideration and the plan was submitted here as formulated after taking of fact and circumstance into consideration, and to say that because the plan provides a certain thing in favor of one person and a deal was made in order to get them to join the application, that isn't so. I don't know who is interested in this other than Anderson-Prichard and we have been in this under House Bill 339. We want a plan that is fair to everybody.

Mr. Adams continues with the Witness:

Q. Will the witness please refer to Exhibit B, part to which is the plan Exhibit 53.

A. I have it, Mr. Adams.

Q. In other words, you accelerate the unknown to Tracts 56, 57, 58, 64 and 65 under this proposed plan?

A. Yes, I explained that before and the reason that I couldn't answer it, I didn't understand the manner in which you referred to it. That is the part agreed upon by conference, Phillips Petroleum Company and Anderson-Prichard had nothing to do with it individually, that has to take care of the royalty owners, who at the present [fol. 619] time are sharing a disproportionate income. My answer to Anderson-Prichard, is that they are to be fair with the royalty owners.

Q. Who owns those tracts?

A. I think that Anderson-Prichard does.

Q. That is an advantage, isn't it?

A. I don't know in what respect it's an advantage. Exhibit B, as it stands, simply provides that a high-cut income to a reduced state of cut income and it's regarded to my knowledge as a fair and equitable way.

Q. Why should it apply to tracts Anderson-Prichard owns and not to all present production?

A. Because Anderson-Prichard happened to buy those particular leases.

Q. Is that the only reason?

A. I think so.

Q. Why does it apply to those leases and no other leases?

A. If you had studied it, it would be easy——

Q. Isn't it a fact that the allowables granted those particular tracts are in excess of what they are able to make?

A. I don't know about that.

Q. In comparison to the reserves under those leases——

A. You are getting around to a statement that I will agree with you on. These particular tracts have the same daily allowable as others, it so happens that these tracts have 15 feet of sand thickness, where others have [fol. 620] 45 feet of sand thickness under the Commis-

sion's rules, if each tract gets the same allowable under the unitization—when this unit was born, those tracts with high current daily—the hypothetical question is, shall we bring about this unitization, is to roughly reduce that income and work a hardship on the royalty owners.

Q. Royalty owners?

A. Certainly, and the operators said that it was unfair that we would cut the income off and make it one-third of what it was. They provided a means of plan and they, for five years, will get more than their equity and in another period of five years pay back and in ten years they would be on an even keel. There is no dealing as I see it, but only engineering and good judgment.

Q. The whole thing was allowing lot allowables in those various segments and you are continuing that?

[fol. 621] *thickn s, where others have 45 feet of sand thickness under the Commission's rules, if each tract gets the same allowable under the unitization—which this unit was born, those tracts with high current daily—he hypothetical question is, shall we bring about this unitization, is to roughly reduce that income and work a hardship on the royalty owners.*

Q. Royalty owners?

A. Certainly, and the operators said that it was unfair that we would cut the income off and make it one-third of what it was. They provided a means of plan and they, for five years will get more than their equity and in another period of five years, pay back, and in ten years they would be on an even keel. There is no dealing, as I see it, but only engineering and good judgment.

Q. The whole thing was allowing flat allowables in those various segments and you are continuing that?

A. I would not call it a flat allowable. I am in sympathy of the problem the Commission has in dividing up in unitization.

Q. In any respect, it does give a proposed plan, accelerates the time in which those particular tracts, that are just numbered 5, 6, etc., gives that oil as compared to the other developed tracts in the field.

A. That is true and that acceleration prevails for a period of five years, as I remember, and you are overlooking

another thing, this plan provides, maybe you haven't read that far, the accelerated payments, this oil is to be taken out of the excess production. It's 5,200 barrels per day, and the testimony is that we think it can be 6,600 per day. [fol. 622] If the Commission will permit it and due to the more effecient operation, this accelerated payment comes out of and is limited and they don't make such a deal. It's limited to 5,200 barrels a day.

Q. They did make a deal?

A. That is——

Q. Look at Exhibit B, part of the plan under the proposed unit operation, you did the proposed of the first year the daily production of 5,225 barrels, is that right?

A. Yes, sir.

Q. It isn't much more than being produced, is it?

A. You don't read understandly. You forget, I will explain that. You mean normal production for the production of this exhibit and I quote "the following amounts of year's production shall be normal production for normal years and opposite first year." It's 5,225 barrels, now that doesn't state what the unit's production is going to be, you overlooked that it can still be 6,600 barrels per day and the production is the production of the amount of oil used for advance payment. More royalty owners in the field were separate, current income for the reason that he says in the Anderson-Prichard tracts, there is another aspect of the normal production and I will explain normal production in the second year, if you want it.

Q. Right or wrong, that is a benefit extended to Anderson-Prichard, that is not extended to other lease owners. [fol. 623] A. That is to Anderson-Prichard, and Anderson-Prichard royalty owners.

Q. Now, did you make, you understand what we mean when we say "you," I understand we mean when Phillips Petroleum Company, in charge of this application, did you make a deal with Gulf Oil Corporation, that they get benefits under this proposed plan as now extended to other operators in the so-called field?

A. No.

Q. Isn't it a fact that you have told representatives of Gulf Oil Corporation that you would buy, as operator, a

second-hand compressor and equipment to establish one of the gas-compressor stations of the so-called field?

A. I haven't committed, if they have that equipment, I would take advantage of that to get started.

Q. Do you know about it?

A. I know that they have had, about a year ago, and they said they would be glad to sell it and I would be glad to buy it at their market price.

Q. You did not make the arrangements?

A. No, unfortunately no.

Q. Have you made arrangements with Gulf Oil Corporation to purchase gas from them in any upper horizon in any of the leases involved to use with the injection into the Medrano sand formation?

A. No, sir.

Q. Did you make a deal with Stephens, when I say Stephens, I think that there are three operating companies, that Mr. Stephens is interested, some are corporation and [fol. 624] is interested, some are corporations and some are other entities, did you make a deal with Mr. Stephens as a result of which a substantial allowable of the unit was contracted to the Gumbo lease?

A. No, sir.

Q. Did you make a deal of similar nature with Mr. Stephens in reference to Stephens-Pell lease?

A. No, sir.

Q. In your direct examination, you attempted to shape the various segments in the area under discussion, would a proposed plan of unitization, would some sort of plan of unitization that has been applied to the south Burbank pool in Oklahoma, do you recall that?

A. I did say in my testimony the results, that have been achieved in south Burbank as an example.

Q. Do you know the structure conditions and reservoir conditions are entirely different in the Burbank pool and the various segments here under discussion.

A. They are different, that west Cement Medrano is still more favorable, all of the conditions that apply are more conducive and beneficial, the south Burbank, here the operation is successful.

Q. In the south Burbank pool, is the geology structure complicated, what fields——

A. I don't believe that there are any fields in south Burbank that is not a complication in this unit operation proposed.

[fol. 625] Q. That is a matter for the Commission to determine.

A. I simply stated my opinion.

Q. You don't ever stop deepening of the structure in the south Burbank?

A. No, but I wish we had.

Q. You think that that would help instead of hindering?

A. The structure, the depth is better for the gas pressure maintenance operation.

[fol. 626] Q. Now, are there any of the wells in the various segments of the Medrano West Cement Area which are making water in substantial quantities?

A. I believe you asked me that question yesterday and I answered it.

Q. Answer it again, please.

A. Well, I'll have to refresh my memory,—(addressing "Henry") Could I have that information again Henry?

Reporter's Note: The witness is handed a written estimate from which he reads, as follows:

Amerada-Harkshorne, that well on February 5, 1947, produced 78 barrels of oil and 34 barrels of water.

The Anderson-Pritchard-Pickard No. 1 well, on February 4, 1947, produced 54 barrels of oil and 42 barrels of water.

The Phillips-Margaret No. 1 well, on February 5, 1947, produced 208 barrels of oil,—ten percent water. These appear to be the largest water producing wells in the pool.

Q. Do you know whether or not any of those wells that are producing water have water disposal wells on the lease?

A. Mr. Adams, I don't just know definitely about that.

Q. Do you know any that do have water disposal wells on the lease.

A. My recollection is that they do not have, for the reason——

Q. Do you know what disposition is being made of the water produced from the wells that are making water?

[fol. 627] A. I imagine the water is being evaporated.

Q. You mean salt water ponds?

A. Yes, it wouldn't be much of a problem to dispose of 34 barrels of water a day.

Q. And hasn't it been your experience that when a well is drilled that if and when that well begins to make water the water content increases and the oil decreases?

A. Well, the fact that a well makes ten per cent water a day doesn't permit one to say that it is going to be eleven per cent,—the rate with which water increases depends upon so many factors I can't answer your question.

Q. Well, is that your actual experience?

A. No, it is not.

Q. Where, in the proposed plan, do you take into consideration, if you do, the fact that certain of the developed leases do make water?

A. The amount of water production was considered inconsequential——

Q. In other words, you did not consider it?

A. That's correct, because it was too inconsequential.

Q. Do you know how long these wells to which you referred have been making water?

A. No, but some of them could have been producing some water from the beginning but the water is not encroaching up structure in substantial volume,—the important thing is this is not a water-drive poool.

[fol. 628] Q. When was water discovered in this pool,—the first well was drilled in 36, so we have some eleven years production history?

A. Well, it all leads to the fact that there is no water-drive of importance in this pool and——

Q. Well, would you refer to Paragraph XXII, in the proposed Plan?

A. I have it.

Q. By that paragraph you seek to saddle the proposed unit operation for any claims which may arise by virtue of pollution damages from the production of salt water

or any deleterious substances arising from the Plan operation?

A. Well, that's a legal question,—if you want my opinion as a lawyer, I'll be glad to give it to you.

Q. Well, I merely wanted to call it to your attention. I am referring to Paragraph XXI of Exhibit 52, which is the Plan of Unitization of West Cement Medrano Unit. Now, as Operator and as an advocate of this Plan do you propose that it be corrected in the event of this Plan's approval prior to the time it is put into operation in order to establish the equities as they have existed between the various lease interests, and I'll read you the last sentence in this Paragraph, which is "nothing herein contained shall apply to or relieve any such owner or owners of liability which may have accrued prior to the effective date of this Plan of Unitization".

A. Well, that's a legal question too,—I would be glad to [fol. 629] speak on that briefly. Since this has been started Mr. Palmer has started a well in the Southwest Quarter of 35, shown in Exhibit 54. The Sterba No. 7 has been completed. Mr. Palmer has a well south of that and the Gulf No. 1 in the Southwest of 35,—now, in my opinion those wells should be drilled farther down the structure——

Q. Well, you didn't answer my question?

A. Well, your question is a legal question. I hope we will not be saddled with any unnecessary expense——

Q. You do not propose to change the proposed Plan to meet any situation that exists at the time the Plan is put into operation?

A. It is my belief and recommendation that the Palmer-Sterba should be included whether the other two wells are included or not,—I will leave that to the lawyers,—I hope they are included.

Q. The Palmer-Sterba No. 7 well discloses information different from that shown by your so-called Geological Committee, does it not?

A. That's right, yes, sir.

Q. And you don't propose to amend the proposed Plan?

A. It is my recommendation that the Plan be amended to the extent that the Palmer-Sterba No. 7 would dictate,—of course that would not be a substantial change.

Q. Suppose, Mr. Kaveler, that before this matter is finally concluded and in the event it is approved, that the Gulf well in the Southwest corner of the Sterba lease is [fol. 630] drilled to the Medrano and discloses a substantially different state of facts than those on which you have relied, as submitted by your Geological Committee, you, then, are of the opinion that the inequities arising by virtue thereof, should not be corrected,—is that right?

A. Well, Mr. Adams, that poses a difficult problem. The better way would be to permit the Unit to settle the problem. For instance, we are confronted now with the problem which Mr. Adams poses in his question,—Mr. Tom Palmer has drilled a well since this Unitization started and Mr. Palmer and the Gulf propose to drill two more wells off the same tract. It is conceivable that the drilling of these wells may disclose additional information, but it is necessary to draw the line somewhere.

Q. Now, after those observations I take it that the answer to my question is, that whatever may be disclosed by the drilling of those wells you don't think it should affect the plan as now proposed?

A. In my opinion it shouldn't.

Q. You didn't meet with the Operators here in Oklahoma City on April 16, 1947, did you?

A. I believe I was there.

Q. And you acted as Chairman?

A. I believe I did.

[fol. 631] Q. You remember there was a great deal of discussion in which the Palmer-Sterba, the Gulf-Sterba, the Pell-Stephens, the Stephens-Dome Bo and other wells were involved?

A. Well, I don't remember that the Gulf-Sterba——

Q. Mr. Kaveler, I hand you Exhibit 73 and ask you to state what that is, if that is the Minutes of the meeting of April 16, 1947?

A. That's right.

Q. You prepared that yourself, didn't you?

A. Yes.

Mr. Adams: We offer in evidence Exhibit 73.

Chairman Bond: Received.

Vice-Chairman Weems: Where is Palmer Oil Company Located?

Mr. Adams: It's principal office is in Wichita, Kansas.

Mr. Weems: How many acres do they have in this field?

Mr. Adams: I believe 320 acres.

Mr. Kaveler: I believe the Palmer Oil Company has only 160 acres in Section 35, not 320. And if you will look at the map again,——

Q. If you will look at that map, Mr. Witness, I believe the North Half of the Northeast, Section 34, Ullery Lists 4 wells on that lease.

[fol. 632] A. That's right.

Q. Now, at this Operator's meeting on April 10, 1947 it is a fact, is it not that Mr. Stephens said that he would attempt to re-work the Stephens-Pell well?

A. Yes.

Q. And would ascertain whether or not it was capable of justifying the large contribution factor which you have allowed to that lease.

A. I think that is substantially correct. Mr. Stephens is now in the process of working the well——

Q. And after Mr. Stephens completes his work on the Stephens-Pell well it was agreed by this meeting, at this meeting, that the information that is obtained shall then be considered, re-considered by the Geological Committees which you appoint in order that they might determine whether or not the contributing factor allotted to the Stephens-Pell well creates a gross inequity, is not that so?

A. I think that is substantially correct, that is, what you say is substantially correct, but the inference is not; it is wholly incorrect.

Q. But the work the Geological Committee was asked to do, the reinspection, that has not been done?

A. Yes, I am talking about the Geological and Engineering Committees. Mr. Stephens said he would re-work his well and report the results, but in arriving at the conclusion it was concensus of the Operators and the Ap-
[fol. 633] plicant in this case that we have presented a defensible position and that we should go forward wi

the hearing, in spite of the work which Mr. Stephens was going to do.

Q. Well, that is the whole substance of the Minutes, is it?

A. Well, we may have conferred further in the matter.

Q. Well, the Geological Committee was to give you further reports, did they do that?

A. They have,—and I've polled the Committee,—the Jury has reported.

Q. In other words, irrespective of what the re-working of the Stephens-Pell well discloses, you don't propose to give those facts any further consideration?

A. No, because we think the equities arrived at are fair.

Q. Do you know how many barrels of oil you have allotted to that well and do you know it would take about one hundred thirty years to produce the oil from that well if this Plan is approved in it's present form?

A. No, you are grossly in error about that.

Q. Well, how many years will it take to produce the oil from that lease under the Plan you have submitted and the allocation made to that lease?

A. It might surprise you to know that I have information that the whole production of the Pell lease might be produced in four years.

Q. You don't propose that, though?

[fol. 634] A. Well, to state what the Unit proposes to do is——

Q. Are you going to say that you don't want to tell the Commission what the Unit proposes to do?

A. The Unit proposes to return all this gas to the wells in order to increase the recovery in a period of from fifteen to twenty years,——

Mr. Adams: Seems to be much exercised over the fact that this well has produced only thirty barrels a day——

Q. Mr. Kaveler, do you think you are familiar with the Plan which you have submitted to the Commission,—do you propose to increase the pressure in segment A?

A. Yes, we do.

Q. Well, what did you tell the Commission about that

you were going to operate this according to best Engineering practice, the Plan doesn't say so?

A. Well, the Plan doesn't say a lot of things.

[fol. 635] By Mr. Adams: Just before the noon recess one of the Commissioners inquired as to the interest of the Palmer Oil Corporation in this particular field and as to its place of business. I want the Commission to be fully informed about that and completely satisfied of our interest. I think the testimony will subsequently show, if it hasn't already, and I don't belief it has, that of the approximate 5200 barrels of daily production of oil that is being produced from this so-called West Cement Medrano area, 400 barrels of oil is produced by the operations of the Palmer Oil Corporation daily. As a matter of fact, while this Corporation is a Kansas, holds a Kansas charter, it has been licensed to do business in Oklahoma for a great many years, I will say several years I don't know how many, and carries on an extensive oil and gas operation in Oklahoma and several other states, just as Phillips Petroleum Company, which is a Delaware Corporation carries on business by license in Oklahoma, I mean by way of illustration.

By Commissioner Weems: One reason that actuated my question, the name Tom Palmer, there was a pioneer in the State named Tom Palmer at Okemah, Oklahoma and [fol. 636] I thought it might be the same.

By Mr. Adams:

Q. Mr. Witness, did you make the computation or instruct the Engineering Committee which you appointed to make the computation of the amount of oil in place by multiplying the sand thickness as determined by your committee of geologists by 35.5 per cent?

A. I didn't do the pencil and paper work, but in behalf of the Operating Committee, as Chairman, I instructed the Engineering Committee of the decisions of the Operators Committee as to the methods to be employed.

Q. And you did that without respect to the fact that you knew, did you not, that the sand thickness map prepared by the geologists committee was not meant to be a productive sand thickness map, did you know that?

A. It was my understanding and always has been my undertaking, what the geologists prepared was a net productive sand thickness map.

Q. You heard Mr. Montgomery testify it was not?

A. Yes, the map which the geologists have prepared is in my opinion showing net productive sand thickness as between the various tracts within the proposed Unit area.

Q. You disagree with Mr. Montgomery?

A. I don't think there is any substantial disagreement between myself and Mr. Montgomery.

Q. You regarded at that time in making your computa-
[fol. 637] tion as a productive sand thickness, is that right?

A. I think it is a net productive sand thickness map.

Q. Now, if you were in error in that respect, that would make a substantial difference in the equities that should be effected to the various tracts?

A. A substantial difference could not be created except for a substantial error and I don't think the map is substantially in error.

Q. Now in applying this percent equally, this 35.5 per cent equally, as against the sand thickness as determined by the geological committee, and with regard to which Mr. Montgomery testified, you didn't take into consideration the fact that in certain segments the estimated recoverage may be a certain percent, while in another segment the estimated would be twice or three times that amount.

A. There was no basis to my knowledge for assuming that the percentage of recovery as between segments would be substantially different. I am not familiar with any engineering evidence that indicates that.

Q. Will you return to the Engineers report Figure "2" I believe and Figure "3", that is Exhibit 71, now if you will look at Figure "2" by way of illustration my previous question that refers to segments, doesn't it?

A. Yes, sir.

Q. And that shows a cumulative recovery under normal operations depletion, is that correct?

[fol. 638] A. For the conditions prevailing in that particular segment, yes, sir.

Q. And that shows about nine per cent doesn't it?

A. Just about, for conditions prevailing in that segment, yes, sir.

Q. Now, that is where Phillips Petroleum Company production is largely located in segment "D"?

A. Yes, sir.

Q. Turn over to Segment "C", Figure "3"?

A. Yes, sir.

Q. It is the next sheet in the same Engineers report and you will notice there that the percent of recovery under the same method in segment "C" is estimated at 18 per cent, isn't that correct?

A. Under conditions prevailing in segment "C".

Q. Now, irrespective of the fact that within the Engineers report shows, well actually it would be twice as much, 18 percent in segment "C" and 9 percent in segment "B", I mean in making your computation, you didn't take that into consideration?

A. Well, intentionally or unintentionally you are neglecting certain circumstances with those figures, and that cannot be answered because it lacks a statement of certain conditions that must be stated. I will try to answer your question in this way, I answered each of your questions "under the circumstances prevailing in that particular segment", —now unintentionally or intentionally you neglected to observe that in each of the figures you refer the reservoir [fol. 639] pressure is substantially different, one from the other, for example, that segment "B" which you poont to and shows a primary operating depletion recovery of 9 per cent, you know that segment has been subjected to a very substantial depletion of gas and the reservoir pressure stands for zero recovery at a value of little better than 1200 lbs. In segment "C" in having something like 19 per cent recovery, the reservoir pressure had zero you show it at 900. If all these curves were placed on the same reservoir pressure base there would be no substantial difference in the recovery in any of the so-called segments.

Q. Again, you are not taking the segments as they are today, but you are taking them back to some theoretical

time in the past in determining what should be allocated to each lease.

A. No, I restate Mr. Adams, that the Unitization is proposed on and as is present day basis. I can explain it for you, but I can't understand it for you.

Q. Well, I appreciate you are smarter than I am in your opinion, but that is neither here nor there,—actually take it as it is today, one is nine percent and one eighteen per cent base and you are not giving any thought at all in your plan to those facts are you?

A. Yes, sir, we are.

Q. How did you compensate for those facts?

A. Well you are trying to bridge between,——

[fol. 640] Q. Just answer the question.

A. I am going to answer it.

By Mr. Brown: I am in favor of Mr. Kaveler answering it.

By Commissioner Weems: Proceed.

A. The figures in the Engineering report, to which you refer, Figures "1", "2", "3" and "4" are intended to show what for each of the segments the bottom hole pressure accumulated recovery relationship is. Under various type of operation. Those are Engineering guides from which the Unitization was derived. I state to you that if each of the Figures had been drawn with respect with initial conditions, which is the way Unitization was drawn, the Plan of Unitization was drawn, and reflecting initial conditions directly in it, presents a new situation. These curves do not apply to that, these show what can be done to these segments under pressure conditions today and the difference that lays between you and me now is, that segment "B" for example could by introduction of outside gas have its pressure raised and the ultimate recovery in segment "B" percentage wise be increased. Figure "2" doesn't contemplate all the things that can be done in this Unit operation to make the oil there more recoverable. I might state further in trying to explain it, in figure "2", which if you will refer to it, you will notice that the pressure shown for zero oil recovery in that particular segment is a little bit better than 1200 pounds, that is the pressure which existed in that segment

[fol. 641] at the time the first oil well was drilled. In that segment, you will recall, segment "B", at that time did suffer a substantial reduction of gas. We have always called attention to the fact that the production of gas out of segment "B" was decreasing the ultimate recovery of oil from that segment. Figure "2" simply shows that segment "B" has had the greatest gas production and on the calculation here presented it is indicated to have the lowest ultimate recovery, but Figure "2" does not interpret the reservoir pressure restoration that can be accomplished by Unitization so as to make the oil in segment "B" just as recoverable as any other quantity of oil in any other part of the field.

Q. Do you know what restoration of gas you propose in your Plan to put into segment "B"?

A. I am sure that the Operators Committee will state, will take steps to buy from outside sources such quantity of gas that is required to get maximum amount of ultimate recovery of oil from any part of that pool.

Q. That is a fine statement but doesn't mean anything, you have submitted a plan to the Commission, you are coming in here and saying Unitization is a fine thing, you have submitted a Plan and that Plan if you look at it is an Exhibit which says you are going to inject into segment "B" 23,000,000,000 cubic feet of gas while you have taken from segment "B" 50,000,000,000 cubic feet?

A. My memory is that,—I wish you would point to that [fol. 642] in the Plan of Unitization.

Q. Maybe it is in the Engineering report, it is Table "6" in the Engineer's report.

A. In the Engineer's report.

Q. Yes, I am sorry, Table "6" shows the amount you propose to inject?

A. Do you interpret Table "6" to mean that is a definitation of — the Operators propose to do in this Unit?

Q. Well that is what I am trying to find out, what the Operator proposes to do, we would like to know?

A. The Operators act under the direction of the Operators Committee, proposes to return at least all of the produced gas, and more if necessary, into the Medrano sand for the purpose of maintaining pressure and substantially

increase the ultimate recovery of oil which, in my opinion, will be an increase of at least 100 per cent. That is the intention.

Q. That is your opinion, what do you propose, how many cubic feet or billion feet of gas do you propose to inject?

A. Well the pool, I would say at least 20,000,000 on up to whatever quantity is economically feasible to substantially increase the ultimate recovery.

Q. You say in segment "B", I think this is in billions?

A. Whether it is introduced in segment "B", "C" or "D", as long as it is introduced to the Medrano sand, the injection will be accomplished.

Q. Your Plan, do you know where you intend to put the plant, have you got to build more than one plant to in-[fol. 643] ject gas?

A. I think a Plan of this size, the plant could be built in some central point in the field. It is obvious you wouldn't build a plant in Oklahoma City for the purpose of injecting gas in West Cement Medrano.

Q. Do you think anybody would think you would?

A. I was afraid you might.

Q. Where do you intend to put the input wells?

A. Almost any uniform distribution of injected gas through the present gas-cap area would be suitable for gas injection.

Q. You intend to put them all in one segment or put one in two segments?

A. There is no limitation,—no choice to be made. It may be practical to put all the gas in here (indicating).

Q. You should know, you are going to be in charge of this operation.

A. Well it may be practical to do that.

Q. Where do you think you should put them?

A. Any place in the gas-cap.

Q. In other words, you want to tell this Commission you could put all of the input wells in segment "B" and repressure the oil zone in the Medrano in each of the segments, is that your testimony?

A. I think we might accomplish that.

Q. You think that?

A. Yes.

[fol. 644] Q. You say that although you are familiar with the present pressures that have been developed from operations in those various segments,—

A. Yes, sir.

Q. If you are wrong about that, then you are wrong about everything else?

A. I would't want to indict you for what few mistakes you make.

Q. Well, you never make one, no it's all right,—now Mr. Kaveler, one of the other items that you have taken into consideration in promulgating this proposed Plan is to pay for gas that isn't produced at the rate of 5c per thousand?

A. With certain limitations, yse sir, that is correct.

Q. And in arriving at what you determine to be comparable values of gas in place and oil in place in the various segments, you allocated to gas a price of 5c and to oil $1 52 per barrel.

A. I didn't do that.

Q. Is that the Plan you proposed to the Commission?

A. That is in the Plan which I urge to be adopted by the Commission.

Q. That is what I mean, the Plan is predicated upon that sort of basis.

A. Yes, sir.

Q. Do you know what oil is selling for in that area at this time?

A. Yes, sir.

[fol. 645] Q. How much?

A. $1.83,—$1.87 positive.

Q. You don't think that difference of 12½ per cent roughly, is the price of oil since you made this computation should have any bearing on a readjustment of equities?

A. Well, that comes back to the practical aspects of this,—which of course the Commission will finally decide. I call your attention to those circumstances that if the equities were recomputed; using $1.87 per barrel instead of $1.52 it would, in the first place have very small effect on the rejuggling of equities as between tracts. The only important thing so far as that price of oil is concerned is

the difference in value that you assign to gas and the difference in values that you assign to oil. Unitization is based on a figure of $1.52 for oil and 5c for gas. In other words, a ratio of 1.52 to 5.

Q. If we should take into account a changed condition from the time application was filed and would use $1.87 per barrel for oil then the people in the gas acreage will say if you are going to change the price of oil you should change the price of gas from 5c to 7c, so if a comparable change is made in the price of oil as you do in gas you will end up with the same thing. If we change this application and equities from day to day it would take into account these changed conditions and you would never get a Unit formed. It would be my recommendation that the Plan be approved as presented because any alteration in the price basis for computing equities would not have a very significant effect on the distribution of equities if [fol. 646] we used the price of $1.52 and keep gas at 5c, the only effect it would have would be to take away from the people in the gas area and give to the people in the oil area, and whether that would be more fair and reasonable than we have now, I doubt.

Q. If gas was 7c instead of 5c that would be a forty per cent increase.

A. Yes and Louis Davis would be very happy about it. [fol. 647] Q. And you think if that is 40% increase in the price of gas, you shouldn't make adjustments about it?

A. The ratio of $1.52 to 5 is 30.4—1. $1.87—7. The ratio of 26.8—1, if you change the price basis in the application and it is $1.52 instead of $1.87, you would be under the doctrine of——

Q. How many dollars do you think will be produced from this field when completely developed?

A. That isn't the question.

Q. Using——

A. You are asking that in relation to this. (Indicating)

Q. You answer my question and let the Commission tell whether it has any bearing or not.

A. I will answer it with an explanation. I think that

that is going to be under a unitized operation. I think that that will be 50% of oil in place.

Q. In dollars?

A. 97 million barrels of oil in place that will be 48 million barrels of oil produced under unit operation and 24 million bbls. produced, if it's not unitized, and what price per barrel do you want used?

Q. In other words, you state that it doesn't amount to anything, it amounts to quite a lot.

A. It will be very substantial.

Q. The way you computed, it is a difference as computed to 26.8—1.

[fol. 648] A. This ratio has no meaning in respect to the point you are now giving it. I will explain what——

Q. If you will just answer the question——

A. You instruct me to do what you want.

Q. I asked you what you think that this pool will produce in dollars and cents.

A. It will produce in oil——

Q. Take $1.87.

A. Well, $1.87 at 48 million barrels of production, $1.87 times 48 is something like ninety million dollars. That is the ultimate——

Q. Now, Mr. Kaveler——

A. I would like to explain this figure as an ultimate to those two figures—(indicating)

Q. That is in your mind. Now, in making the computation in the allocation of percentages under the proposed plan to the variations separated lease hold interest, you or someone as to instruction, attempted to interpret existing contracts to accomplish that computation, isn't that right?

A. You mean in existing lease holds——

Q. Interests——

A. Yes, sir.

Q. Did you do that, Mr. Kaveler?

A. I would have liked to, but didn't have time to do it.

Q. Did you tell whoever made that computation about that, did they make it——

A. They may have, someone did.

[fol. 649] Q. You have a computation in the plan, who made that computation?

A. The operator's committee and the engineer's subcommittee, I suppose you are referring to the controversy between Palmer and Gulf?

Q. I wondered why you attempted to make a computation of the interest of the percentage allocated to the Sturba lease, as between Palmer Oil Corporation and Gulf Corporation.

A. It is my understanding that Palmer required that interest in the lease by taking an over-right contract from the Gulf. It is our understanding that Tom Palmer's rights on the Sturba lease extended to 6,000 feet and it so happened that nature played a mean trick by causing the Medrano oil sand to straddle that 6,000 feet mark and it is our understanding from the interpretation of the contract as between Palmer and Gulf that the interpretation is such that if this Medrano oil underlying the Sturba lease lying at a depth less than 6,000 feet, that the lease hold is one-eighth of right, whereas the oil that lays below a depth of 6,000 feet, it has a lease hold right of the Gulf Corporation and with such a statement we attempted to make a split on that basis.

Q. If you have not correctly interpreted the contractual arrangement that existed between Palmer Corporation and Gulf Oil Corporation then the allocation of percentages as between those two companies with respect to participating interest for Sturba lease will be inaccurate, isn't that right?

[fol. 650] A. Not so far as distribution between Palmer and Gulf, it will be inaccurate, it will be my recommendation that it not be made.

Mr. Williams: Doesn't that inaccuracy apply to the lease itself?

A. Not to the equity of the Sturba tract, which is tract No. 30 and 31.

Mr. Adams continues with the Witness:

Q. In referring to the plans submitted, page 26, Exhibit 52, paragraph XXVI, if that is an area adjacent to what you wish to come now constitutes this pool, which is subsequently developed with production of oil or gas from

the Medrano sand formation, do you propse that that addition come under and be incorporated in this unitization?

A. Under provisions of Section 11 and 12 of the 1939 legislature——

Q. Is that your statement?

A. I think that the law demands that that be done and I think that we ought to abide by the law.

Q. Bearing that in mind, would it not be more equitable to omit from the present area proposed to be unitized, the undeveloped and uncertain acreage, which you have incorporated therein and await until it is developed to determine whether this properly belongs in the area.

A. The answer to the question, Mr. Adams, is both yours and now I take it that you are referring to the tracts——

Q. Stephens-Gumbo lease.

[fol. 651] A. Are the two tracts just north of the Gumbo lease, nor the operators doubted a long time whether they should be taken in or left out of the unit. Here is a small portion of the tract taken and is a small portion of the Holland tract taken in, the operators were forced with this situation. This plan is completely defined by development and one can say with certainty that all of this tract is included in the unit area, you have some oil and gas under them too, to some extent by exhibit 54. The unit operation has to be of such character that that oil and gas, even though in small quantities, will be recovered by the unit. The Gulf-Holland will be recovered by gas injection or result of water flooding alternately. The unitization can proceed under one or two general theories, the theory adopted by the operators in this instance, we want to get all the geologists' facts and take into this unit all of the tracts that contribute to the unit to any extent and following that theory, that is proposed in this unitization, a number of tracts that part of which are proven productive and I think that the Holland tract is proven to date, Mr. Holland doesn't agree. I think that the well data is well established as productive on that particular lease. In that theory, that could be adopted is that these tracts are part, a smaller part, included in the unit, contains a small per cent of equity that for a particular consideration, they should be developed from the unit. Had we time, we would

have checked that Stephens, Odal, Thal, Gulf, Holland and would have drawn our unit boundary in there with respect to the geology picture, but for the reason of exploiting [fol. 652] these small tracts, which way will we go, I will leave it to the Commission. We could not decide, we took the furtherst way and included everyone that was included in the operation to any extent.

Q. You are fostering another unit plan, are you not, in that field where you have taken only the units that are producing?

A. Yes, sir.

Q. Which is right?

A. I will leave that to the Commission, they will have a chance for that and give their best judgment in both.

Q. I suppose in the other hearing you will take the other stand?

A. Powerful as I am, I can't solve all the problems.

Q. Which one do you think is right?

A. I think that the fairest thing to do is to give everyone credit for what they contribute, what is fairest isn't always the test of applicability.

Q. You said that you prepared—your theory is that wells which are located down structure are much better than the wells that are located at structure and oil bearing horizons.

A. That is another question, Mr. Adams, I can't answer that yes or no, because it's not sufficiently predicated, if the well was allocated and let them run wild, I would then——

[fol. 653] Q. The experience shows it's now happening.

A. It is.

Q. Where?

A. In West Cement field.

Q. Where, name a well.

A. The gas wells produced at a rate of 20 per cent depletion, that is in evidence.

Q. And the oil is ceasing to be produced in the gas wells, and oil wells cease to get it down structure.

A. It's in a measurable quantity of oil, it's Stephens-Farr well southeast of southwest section of 27 is now producing a substantial amount of gas. You examine Exhibit

54 and you will see that that oil has been drawn in and, too, gas wells, and I would rather have that well because it get's it's share of gas and oil.

Q. The theory is that a down structure is better than a well up structure.

A. It depends on how a well is operated, if it's on competitive basis and they are shut in, it's not fair to have a well down structure, that will pull the oil down hill and I would get more than my share of competitive basis. That is the plan——

Q. That is the plan on which the unit proposes to operate and the plan as submitted.

A. No, sir, that is not correct. When there is a unit that [fol. 654] won't be any cutthroat competition on anyone——

Q. The theory for unit operation is that the wells down structure will produce the oil, is that correct?

A. Yes, sir.

Q. That well to which you just referred, do you know what the accumulative production is on oil?

A. Accumulated oil production is small because it's only been making oil the last year or two.

Q. What is it by months, the last two or three months?

A. I don't have it, I will have to get it, this well is classified as a gas well.

Q. Here is the date report on it. (Hands witness report.)

A. What do you want me to ascertain?

Q. You say that it's making oil, how much oil is it making?

A. Mr. Stephens will have to tell me again, as I recall, about ten barrels of oil a day.

Q. What does the date report show?

A. The date report shows that Stephens-Farr well No. 2 had it in pipeline runs, during the month of March——

Q. Now, will you turn to table 10 in the engineer's report, your engineer's report——

A. I have it, sir.

Q. Look at column 33 under L zone and column 46, correct me if wrong, which shows practically no gravity drain-

[fol. 655] age in credit for gravity drainage, is that correct?

A. I don't know what your inquiry is.

Q. Is my statement correct?

A. Well, I will have to study it a second, Mr. Adams. The attributation on gravity drainage is not in the table as I thought it was, the attributation for gravity drainage is not in this paper.

Q. In any respect then, in answer to my question, would you know then——

A. You are asking if the data and table 4 is the basis for computing the equity?

Q. Is my statement right?

A. That is correct.

Q. Now the plan of core is drawn on the theory of gravity drainage?

A. The plan gives credit for gravity drainage, that may occur in the absence of unitization in order to comprehend it, the down structure leases for struction position.

Q. Now if you had a well and structure on the oil bearing zone in the Medrano sand, you would be penalized as again having a well lower on the structure under it, under this plan, isn't that right,

A. You say penalized, I say that the adjustment to gravity drainage is not enough for a penalty. You recall in [fol. 656] that previous testimony, I testified in order to be equitable of the tracts, we took in account oil and gas in lease production and structure position. Structure position is taken in account.

Q. How?

A. I am getting ready to tell you by distributing four million barrels of oil in addition to oil attributed to the lease and the oil today, four million barrels is atttributed in all the leases in the pool.

Q. On what plan?

A. On the plan that distributed the oil in respect to the structure position, the lowest structure located lease.

Q. Shut the oil?

A. Get the largest proportion of the four million barrels out of the ninety-seven million in the pool.

Q. And still it is called the lower structure leases.

A. Unfortunately, no, that was Amarada and Anderson-Prichard and Phillips Petroleum Company and Stephens and Gulf, they all have leases, there is no preference shown.

Q. Now you, on your testimony, have many times referred to those various segments, A, B, C, and D, constituting source of supply, I wonder if you would mind putting it on the board over there? (Mr. Adams hands the witness exhibit 72).

[fol. 657] Q. Mr. Kaveler, this is an enlarged picture of Exhibit 72 (Counsel refers to Map placed on Blackboard) I wonder if you would take this red pencil and mark with a red line in such way that we may compare it with the Map up above.

A. You want me to mark this in conformity with Exhibit 54.

A. That's right.

A. Right there would be marked the Sherrit-Fault (Counsel makes red line on plat)

Q. Okay, what is the next red line across there?

A. That is called the Sterba Fault.

Q. And the next red line on this Exhibit?

A. That is called the Hartshorne Fault, and here (indicating on map) is the Edwards Fault.

Q. Now on this map, I don't know whether you would call this,—What do you call this (indicating on plat)?

A. Well, this is an Isobaric Map.

Q. That is a number of small lines on it with pictures in between the various Faults,—will you explain what these lines are?

A. They are Isobars.

Q. Indicating what?

A. Lines of equal reservoir pressure.

Q. And the numbers indicated on those lines indicate what?

A. The pressure by pounds per square inch,—per inch, sub-sea-depth.

[fol. 658] Q. The pressures are all at the top of the sand?

A. Yes.

Q. Now, referring to this Isobaric Map, the pressures

were determined as of those as of November, 1945, did you say?

A. I did so state.

Q. I notice that some of those pressure lines within a particular segment are not connected,—would that indicate that there is not a uniform pressure within a segment, is that correct?

A. That's correct.

Q. Comparing this Exhibit 72 with the Geological Map, Exhibit 54, are the Fault lines on this map, these maps, are those lines in approximately the same location?

A. It appears that they are substantially the same.

Q. Now, if you will notice those pressure lines, they all break at these Faults, don't they?

A. Well, I think they do, generally.

Q. Well, do you find any that don't break at the pressure lines?

A. I don't see any.

Q. So, at segment A you have a pressure of eleven or twelve hundred pounds?

A. That's right.

Reporters Note: At this time a short recess is had and at the close of such recess the Commission is again in session and the hearing proceeds, as follows:

[fol. 659] Q. Mr. Witness, looking at Exhibit 72 on the Blackboard, and looking at Exhibit 54 on the Blackboard, each of these maps reflect variations, very substantial variations, in pressure and on the location of producing formations in the Medrano section, isn't that true?

A. Of course, Exhibit 54 doesn't reflect a substantial variation of pressure.

Q. I understand, but one difference with variation of pressure and the other with reference to horizons,—now, let's move over to segment 3 on Exhibit 72,—isn't it true that it shows a wide variation of pressures on one side of the Sterba Fault, with respect to the other side of the Sterba Fault?

A. Well, generally it shows about fifty pounds variation, if that is to be considered as a wide variation, but in my opinion that isn't a wide variation.

Q. On one side of the Sterba it shows an eleven to

twelve hundred pounds and on this Exhibit it shows five hundred to nine hundred pounds, isn't that right?

A. That's correct.

Q. Well, comparing the Phillips-Oakes No. 3 well with the Oakes No. 4, the pressure is even greater than between Exhibit B & C but on your Isobar lines, all your Isobar lines break off directly at the segment, don't they?

A. They are so drawn.

Q. That was the information furnished you?

[fol. 660] A. That was the information furnished me by the Engineer's Committee with reference to the pressure depth.

Q. Now, if those Fault lines didn't exist, if there were not Faults there, then those Isobars or pressure lines wouldn't break off, they would extend on, wouldn't they?

A. I think that is generally true but they wouldn't——

Q. Well, has a local thing,—that is local with respect to distance, but not with respect to establishing the same common source of supply?

A. Local is local in my vocabulary.

Q. Then if there was a stone wall there that would be local to you, would it?

A. Well, it would be a local stone wall.

Q. Refer to the Sterba lease as shown on Exhibit 54,—isn't it true that there is about four hundred fifty feet of break as shown by this Sterba Fault?

A. That's true, as Mr. Montgomery testified.

Q. Now, in your Engineer's report you propose to operate these various segments, it is your intention, is it not, to operate segments separately?

A. No, sir.

Q. You are telling the Commission that you propose to equalize the pressure in all segments by injection of gas.

A. That's right, we may even equalize that extend the pressure over what exists now.

[fol. 661] Q. This is indicative to you that in Segment C there where you have eighteen per cent while in Segment B it is eight percent,—does that indicate a difference of those segments?

A. No, because I can't misinterpret the evidence, as

you are doing through a misunderstanding of what it purports to show.

Q. You got information from your Geological Committee that this field was cut into segments, didn't you?

A. Yes, Mr. Montgomery testified to that.

Q. Will you tell me, "We have got to have this all one common source of supply or else we can't Unitize it" and——

A. No,—the answer is no.

Q. You know that you can't unitize the fields, a field unless it is one common source of supply?

A. Yes.

Q. Why don't you unitize segment B?

A. Well, being aware of the law and feeling that it is all one common source of supply my deduction was that the entire common source of supply should be included in the proposed unit. The evidence has shown that there is no impenetrable barrier between these segments.

Q. You know how much the pore volume withdrawal has been?

A. I have looked that up.

Q. Does that indicate that there is no connection between these segments, because the bore withdrawal is in exact proportion with the amount of the withdrawal.

A. My calculations do not indicate that.

[fol. 662] Q. Do you have your calculations?

A. I don't have them right with me, but I think I could,—I have general knowledge what my calculations were.

Q. I don't care about your conclusions,—If such computation accurately made showed that taking into consideration the withdrawal, compared with the pore volume there was no connection, then you would say there was connection?

A. I don't think that computation can be made.

Q. Do you know what the withdrawals have been?

A. Yes.

Q. You have testified as to what the pore volume is?

A. Yes.

Q. And you say when you have those factors they don't mean anything?

A. I didn't say that.

Q. Well, do they mean something?

A. I said they do, I said that such calculations generally show a complete,—that such calculations don't show a complete separation between the segments.

Q. Wouldn't that be the most accurate way to prove that fact?

A. Yes.

Q. Well, let's.

A. Well, let me have time to get my work files and I'll talk to Mr. Wood——

Q. Do you have such computations?

[fol. 663] A. We don't have them with us, but I'll be glad to get my files and get them for you.

[fol. 664] By Mr. Adams:

Q. Turn to your blackboard over there just a minute, Mr. Kaveler; now take two tanks, two segments, whatever you want to call them, segment "A" and segment "B", put your "B" to your side, just show it as segment "B", the fault or barrier line isn't quite that far apart, but there is a barrier line in there, now if you knew the pore volume in each of those,—used the same pore volume in each of those, it is easy to follow, you use any number I don't care?

A. "1" and "2".

Q. Now you know the pressure in each of those, put down whatever pressure you want to.

A. 5 and 10.

Q. So as compared to your pore volume your pressure is the same, is that correct?

A. No, the pore volume is 1 and 2, the pressure is 5 and 10, you said I should take any number I chose, I would be glad to change them anyway you wish.

Q. That's what we are lifting is atmospheric pressure, is that correct, let us consider it as atmospheric pressure.

A. 5 pounds atmospheric pressure and 10 pounds atmospheric pressure.

Q. Now, if you knew the amount of withdrawals from "A" and the amount of withdrawals from "B" and know the reduction in pressure with respect to each, you could definitely determine whether or not there was any com-

munication from one of those areas to the other through [fol. 665] that barrier, couldn't you?

A. You could under certain conditions.

Q. What conditions could you have that you could not?

A. When you propose a problem like this, there are a lot of circumstances to be considered. Now the second picture you are proposing here, container "A" is self-contained and container "B" is self-contained,—I think your answer under those restricted conditions, you get reasonable accuracy.

Q. It should be absolutely accurate, shouldn't it?

A. There is a limit to the human element.

Q. Is there any more accurate way to determine it than that?

A. No, no more accurate.

Q. Would the barrier in between,——

A. I was worried how precisely it could be computed.

Q. You haven't done it in this pool?

A. Yes we have, I told you we did.

Q. Where is it?

A. The work sheets are in my file, I will have to get them.

Q. Will you bring them here?

A. Yes, sir.

Q. Have them here in the morning?

A. Yes, sir.

Q. Referring to Table "9" in the Engineers report, item "4" shows that I presume that is the original as reconstructed theoretically the reservoir pressure at the gas oil contact each of the segments are involved was 2000 [fol. 666] pounds?

A. The answer is "yes sir" except for the use of the word "theoretical".

Q. You don't know it was theoretical?

A. I know with certainty it goes beyond.

Q. It is your opinion?

A. My opinion goes beyond the point of theory.

Q. In your opinion it does, after all this is for the Commission to decide and not you,—then this table shows that the pore volume in each of the segments so determined by your engineers, is that correct?

A. That is correct, yes, sir.

Q. Now at the time of the discovery of oil, referring to item "6" on the same table, it reflects a variation, a very substantial one does it not, in pressures existing in segment "A", "B" and "C", with relation to those shown in "D" and "E"?

A. That is right, in other words the line "6" in table "9" of this particular exhibit shows the average pressure condition existing at the time that oil was discovered in each of the segments and the substantial condition in pressure which you observe is due to the large volume of gas withdrawal in each of the segments preceding that time.

Q. In other words, in segment "B" there was a very large withdrawal of gas before the discovery of oil?

A. In segment "B", yes, sir.

Q. In segments "D" and "C" withdrawals were much less materially?

[fol. 667] A. Yes, sir.

Q. But there is a variation as between those segments at the time of the discovery of oil and gas contact of anywhere from 200 to 800 pounds on one side of the fault line and the other side of the fault line, is that correct?

A. That is correct.

Q. While the segment "D" and "E" which are across two more fault lines even though there had been large withdrawals of gas from segments "A", "B" and "C", the pressures in segments "D" and "E" remained at their original pressure?

A. The circumstances were such as to produce that, yes, sir.

Q. Still, you say there is no effective barrier there between these segments, is that right?

A. I say there is no complete barrier between those segments.

Q. Well, is it an effective barrier?

A. That depends on the meaning attached to the word "effective".

Q. Well if that pressure was absolutely the same in segments "D" as it was in its virgin period but on the other side of the fault, the first fault, over, it went down 250 pounds and the next fault over it went down 250 pounds,

which was almost half of the virgin pressure, after producing 30,000,000,000 cubic feet of gas, you say that is not an effective barrier that would maintain that sort of pressure?

A. It is an effective barrier in a sense that it doesn't permit rapid equalization of pressure.

[fol. 668] Q. Does it represent any equalization?

A. These faults are of such nature as to permit migration between segments and the pressure conditions about which you point out, are no greater than pressure conditions that exist in the segments themselves where you consider there are no faults.

Q. Why it would break immediately at the fault line?

A. Why does it break immediately between Phillips-Oaks No. 3 and Phillips-Oaks No. 4?

Q. You just answer the question.

A. For the same reason it shows that break between those two wells.

Q. I don't feel that you answered my question.

A. I would be glad to attempt it again, I say that the pressure conditions to which you point are no different in character.

Q. Use your school teacher stick and point to the Hartshorn fault,—that is the Hartshorn fault.

A. Yes, sir.

Q. On the east side of that, the pressure at the time the oil discovery was 2000 pounds, wasn't it?

A. I believe that is correct, if Table "9" so shows.

Q. On the West side of the fault upon oil discovery the pressure was 753 pounds?

A. That's right.

Q. And then on over to the Sterba fault the pressure on the West side of the Sterba fault was 1142 pounds?

A. That's right.

[fol. 669] Q. On the East side of the Sterba fault at the same time the pressure was 1753 pounds, is that right?

A. If Table "9" states, that is correct.

Q. Now referring to the Edwards fault,—

A. I point to that.

Q. At the time of oil discovery the pressure on both sides of that fault was 2000 pounds?

A. That is correct is Table "9" shows it.

Q. And that there had been no production of gas to the South and East of the Edwards fault, nor between the Edwards and the Hartshorn faults prior to the discovery of oil?

A. I believe that is correct.

Examination by Mr. Williams:

Q. Where were those pressures measured, in the oil zone or in the gas zone?

A. The pressure was in the top of the sand.

Q. In the oil zone or gas zone?

A. Mr. Adams isn't making any difference?

Q. It is in the gas-oil contact, all of these pressures were taken in the same locality with respect to each segment?

A. It is in the same structural point, gas-oil contact, yes.

Q. Doesn't it necessarily follow, Mr. Kaveler, that there was effective communication through those fault lines that your pressure wouldn't go down to the West of the Hartshorn fault and still be maintained at its original pressure [fol. 670] East of the Hartshorn fault?

A. Doesn't necessarily follow.

Q. You don't think so?

A. No, sir.

Q. Do you know how much gas was produced before oil was discovered in the pool, isn't it, to refresh your recollection, isn't it about 30,000,000,000 cubic feet?

A. About 60 per cent of the gas that was originally in the pool, I will use whatever figure you want to, about 30,000,000,000.

Q. So that actually to pull these pressures down, there was about, I believe you just said 60 per cent of the gas in place which was produced?

A. I don't believe it is 60 per cent, let us use 30,000,000,000.

Q. About 33 1/3 per cent of the gas in place was produced before oil was discovered in this formation?

A. That's right.

Q. Now, as one third of that gas was produced, approxi-

mately what per cent of the pressure in the formation would be released?

A. Well, we will go along and make some approximate guesses.

Q. Would it be about like shown in the,—yes, in the absence of water encroachment, in the absence of gas coming out of solution, coming in the oil. About what percent of gas is in oil solution?

A. I think the amount of gas in solution in this pool originally was about 800 cubic feet per barrel of oil. It is 427 cubic feet dissolved and your withdrawal of gas about 45,000,000,000 of gas dissolved in oil initially.

[fol. 671] Q. That is compared to the table?

A. 40,000,000,000, about one-third of the gas in the pool was originally dissolved in oil.

By Mr. Adams:

Q. Now as an Operator, in the event you got to be an operator of everybody's property out there, you don't propose to equalize pressure, do you, between segments?

A. Simply means, it depends how the most oil could be acquired, if it requires injecting gas in one locality we will do it, and if it is to inject in the common source of supply, we will do it; we will do whatever good engineering practice dictates.

Q. Do you know that the Palmer Oil Corporation's oil wells that are involved produced about a total of 400 barrels of oil per day?

A. I suppose that is right, I will take your word for it.

Q. Your Plan of Unitization states, that to put the same into effect, the costs should be paid off in about three years, can you roughly state to the Commission what it will cost Palmer Oil Corporation for you to take over the operations of its properties, wouldn't it be about three quarters of a million dollars?

A. A good guess, about 1,750,000, or about 2,000,000 dollars investment in a full scale gas injection facility.

Q. I am taking what you say in your plans.

A. We don't say anything in the Plan.

Q. You say it takes about three years.

A. That doesn't say that in the Plan.

Q. Pardon me, it is in the Engineering report, I am sorry, page 2 of the Engineer report it says, "under Uniti-
[fol. 672] zation's program, the initial program for gas injection facilities in additional drilling will pay out after three years, after commencement of Unit operations", so that means you estimate, does it not, about three years income that you are going to consume before the fellow whose property you take over gets anything back?

A. I don't think so, I think to the lay's mind it means that—but it actually means so much additional profit from that operation he will have his money back over and above what he otherwise would have gotten and paid for his investment in three years, which is an exceedingly good investment in the oil business.

By Mr. Adams: If the Commission please, until they produce those work sheets, I am not very well able to proceed with further cross-examination.

By Chairman Bond: The Commission will recess to 10:00 o'clock a. m. Thursday.

[fol. 673] Mr. H. H. Kaveler, now resumes the witness stand for further cross-examination and testified in answer to interrogatories propounded as follows:

By Mr. Adams:

Q. Yesterday evening at the close of the hearing we asked you to produce your work sheets in accordance with your response that you had made the computations based on your figures of the porespace each segment and the original pressure of each segment and the withdrawals in each segment prior to the discovery of the oil-gas contact in each segment, you said you had made such a computation, do you have these work sheets reflecting such computation?

A. Mr. Adams has now asked me for something different from what he questioned me about yesterday. In answer to your question this morning, you understand I am trying to be helpful about it,——

Q. Just answer the question, just what I asked you for

yesterday, maybe you can't comprehend, but that is what I asked for yesterday.

A. I would appeal to the record in the matter of this computation. You now ask for a computation involving sand thickness and pressure. That calculation is in evidence. That is exactly the basis of the determination that I have been testifying about. Yesterday afternoon you [fol. 674] asked me if I had made any figures, any material balance calculations. I said I had and Mr. Koplinger,—now you asked me for calculations involving sand thickness and pressure, those calculations have been made - a number of people including myself, and they are in evidence here, certain tables, in fact I think they are in Table "9" of Exhibit 71,—Table "9" Exhibit 71 is the computation showing the stock tank oil in place originally in the pool segmentwise as you desire, which is the information you now request of me.

Q. That is not the information which I requested of you.

By Mr. Williams: There seems to be a misunderstanding.

By Chairman Bond: If you gentlemen cannot agree we will refer to the Court Reporter's notes.

By Mr. Adams: That is quite all right, your Honor.

By Chairman Bond: If you can't agree on the information you desire, it will be furnished, otherwise we will have to refer to the Court Reporter's notes.

By Mr. Williams: State it again Mark.

By Mr. Adams: While Mr. Woods is attempting to find the work sheets,—we want the work sheets.

By the Witness:

A. I will explain I do not have the work sheet. I will state the reason for it.

By Mr. Adams:

Q. Did you make such computation on work sheets? [fol. 675] A. I did.

Q. Where are the work sheets, that is what we want to see?

A. I am telling you I don't have them, I wish to explain why I don't have them, if you are interested in knowing.

Q. We aren't interested in knowing.

Cross-examination.

By Mr. Reford Bond, Jr.:

Q. Mr. Kaveler, I believe you testified that the Operators Committee placed you in charge of the geological committee and the engineering committee, is that correct?

A. To the extent, Mr. Bond, with which the Chairman of any committee is charged with the responsibility of transmitting the wishes of the Operators committee to it's sub-committees.

Q. Did you transmit the wishes of the Operators to the committee?

A. I think I did, faithfully.

Q. What were those wishes?

A. The wishes were, I think I could state, to make a thorough examination of the geology and the engineering aspects of the West Cement Medrano pool and to make recommendations in respect to a possible unitization operation of the pool and to make such recommendation as they saw fit with respect to the manner and method of unitizing the pool in its subsequent operation.

Q. Did the Operators committee instruct you to direct the geological committee or engineering committee, or both of them, to prepare a plan for unit operation as contemplated by the Statutes of the State of Oklahoma for unit [fol. 676] operation?

A. The Plan was prepared by the Legal sub-committee working closely with the Operators. I assume you mean the Plan as here presented.

Q. The Plan as you are here now presenting to the Commission?

A. Yes, sir.

Q. Was the legal committee also under your supervision?

A. Well, nominally, so.

Q. What part did the legal committee play in working

out the equities between the persons entitled to the oil and gas production in the Unitization Plan.

A. None except for such sage advice as they might be able to give to the Operators from time to time.

Q. Tell the Commission what sage advice they gave the committees and the Operators from time to time with reference to those particular matters? Of the division of the oil and gas between the persons entitled thereto?

A. In respect to the division of the oil and gas they gave no such advice.

Q. Now, did both of these committees report back to you as to their progress from time to time?

A. I would say they reported to the Operators committee.

Q. But they didn't report to you?

A. No, sir.

Q. Were you familiar with the work of the geological committee at the time they were conducting their calculations?

[fol. 677] A. Reasonably so, yes, sir.

Q. And did you familiarize yourself with their work after it was completed?

A. Reasonably so, yes, sir.

[fol. 678] Reford Bond, Jr. examines the Witness:

Mr. Kaveler is on the stand.

Q. Are you able, and do you comprehend all the methods and facts and proceedings that they used in arriving at those conclusions?

A. To a reasonable extent, yes, sir.

Q. What do you mean by a reasonable extent, the only way to understand fully——

A. I don't present myself as an expert in geology and no expert in the law and so, with some reluctance, I don't pretend to have a conclusive knowledge of all the facts, but I do have a working knowledge of the geological considerations, that went into the formation and distribution of equities and the plans of the formation of the pool.

Q. Did you tell the Commission or do you tell the Commission that you understood the work that the geologist's

committee did and that you have examined the facts from which they produced that work and conclusions to such an extent that you could go over each foot that they put and explain it to the Commission?

A. I think I could, if you desire to take the time that is required.

Q. Now you feel certain that you could do it, do you not?

A. Yes, it will take some time, I will indulge in it.

[fol. 679] Q. You tell the Commission that you would do that?

A. I will say that I can, yes, sir.

Q. Now then, are you as fully cognizant of the facts that the engineers used and the methods which they used in reaching their conclusions as you are of the facts and methods used in the geology?

Mr. Booth Kelbough: I think that is an improper question, he is attempting to qualify the witness as a geologist and he has already stated that he isn't one.

[fol. 680] Chairman Bond: *he* refused to qualify as a geologist or lawyer, but as an engineer and said he had a working knowledge of the committee. If you want that working knowledge you are entitled to ask him, that is as far as he has qualified as to the geologist part of it here.

Mr. Booth: *the* statement is that is he equally qualified as to geology or engineering facts.

Chairman Bond: *he* could easily answer that.

Mr. Booth: *he* has not qualified as both.

A. (Continuing by the Witness) I am not an expert geologist nor do I present myself as such. I am an engineer and as to engineering, I am qualified and am testifying as an expert in engineering.

Reford Bond, Jr. continues with the Witness:

Q. You have examined the facts and are you fully familiar cognizant of the facts that the engineers used in reaching the conclusions that they reached and have set forth in their report, with reference to the provisions of the oil and gas among the persons that are entitled thereto in the unitized area?

A. I am and have studied the west Cement Medrano pool for some nine years.

Q. You are able to explain to the commission each step in reasoning and all the facts in connection therewith that the engineers took in reaching their logical conclusion as to the division of the oil and gas as between the persons thereto entitled in the pool?

[fol. 681] A. Yes, sir, and I have already done so in this hearing, Mr. Bond.

Q. Now you say that you have studied the west Medrano pool for nine years, how long have you been familiar with the Cement area?

A. For about eleven years.

Q. You had no connection in your capacity as an engineer either in the East or West Cement Fields until eleven years ago?

A. That is substantially true, yes, sir.

Q. But you have had eleven years, you had eleven years ago interest and entered into a study of the West Cement and also I believe the East Cement which took that history clear back to the incorporation of the beginning of the field.

A. That is substantially true.

Q. Can you tell the court about when the East Cement field was discovered?

A. I would have to refer to records and I would have to refresh my memory on that.

Q. Would you do that?

A. Yes, sir.

Q. And advise the commission when it was started, are you able to answer the question? The question when the first well was drilled in the East Cement Field?

A. I will answer it when I am permitted to go and examine the public records, could I do that?

[fol. 682] Q. Can you tell the commission in about a year?

A. No I would have to refresh my memory.

Q. Could you tell the commission when the West Cement first well was drilled?

A. Yes, I think that I have told that.

Q. Will you tell that at this time?

A. I have the first well in the West Cement Medrano.

Q. That isn't what I asked you.

A. The first productive in the West Cement, was about 1920 or 1922.

Q. That is when the first well was?

A. That is about my judgment.

Q. I will ask you if it isn't a fact that the first well drilled in the West Cement Field by the Fortuna Company in the Northwest quarter of the southwest quarter of section thirty one, township six north, range nine west, Caddo County Oklahoma 28 depth at 2340 feet and it made thirty million cubic feet of dry gas and I will hand you the Corporation Commission well log for you to refer to as stated and showed that it was completed October 17, 1947.

A. This is a Corporation Commission well log, division, Oklahoma City and statement thereon as you read it and the information is the first well in the Cement field, if you represented it so, I will accept it as a fact.

Q. I want you to tell the commission if that is true.

[fol. 683] Mr. Williams: I want to know, he said he is familiar with the area and has been for eleven years as to other sands, when it was discovered.

Chairman Bond: Counsel can probably tell what it is for and whether it is material and if it is, he might wish to know what was allowed.

Mr. Williams: He is not inquiring about that, the well is 2300 feet well outside of this zone entirely, he is not inquiring about the Medrano pool.

Chairman Bond: Why are you referring about wells outside the plan?

Reford Bond, Jr.: Because the statute provides that it's not applicable to any field which is more than twenty years old, that is the purpose of this.

Chairman Bond: You are raising a legal question? If you are, you may raise it.

Reford Bond, Jr. continues with the Witness:

Q. Mr. Kavaler, the well log that you referred, has been marked exhibit 74, is that correct?

A. Yes, sir, that is correct.

Q. We offer exhibit 74 as part of the witnesses cross-examination.

Commissioner Weems: It may be admitted.

Mr. Williams: We object to that as incompetent, irrevelant, immaterial and as not being on the issues on the case, the commission has admitted it and we want - save an exception plea.

Commissioner Weems: Acceptance allowed.

[fol. 684] Reford Bond, Jr. continues with the witness:

Q. Now Mr. Kavaler, I call your attention to table nine of the engineering sub-committee report, exhibit 71 herein, and particularly to item number one which shows a reservoir volume of the oil zone sand taken from the sand thickness map for a total of 124,073; do you find that on your exhibit, Mr. witness?

A. I do sir, yes, sir.

Q. What is the unit in which that figure was calculated?

A. Acre foot as indicated in the first column preceding the segment designation "A".

Q. A F?

A. A F, yes, sir.

Q. Now I call your attention to exhibit 53, page 3 in which the oil zone acre footed of the West Cement Unit is given as 125,010 acre foot, do you find that on your copy of the exhibit?

A. Is that marked table one, that you refer to?

Q. That is page three, column three marked oil zone acre foot.

A. Number one, I have that figure, yes, sir, I note it here.

Q. Will you explain to the commission the difference in these two thicknesses?

A. (The witness goes to the blackboard) Counsel calls attention, Mr. Commissioner, that the fact exhibit 71, table nine, is a report of the engineers committee to the operators committee, the report that was taken and from [fol. 685] that the unit plan was formulated, that the total number of acres of sand in the unitized area was 124,073

acre foot and he calls attention to the similar exhibit, which is 53, to a table introduced in evidence for equity calculation, wherein the acre foot of sandstone in the unitized area is 125,010, approximately—counsel has repeated that the fact that there is a difference in the figures and that difference in acre-feet is 937 acre feet which is a variation of about .5 of one percent discrepancy between the two figures, .5 of one percent discrepancy may alarm a layman, but there is almost a limit that can be put upon a mechanical calculating machine which obviously makes mistakes it is insignificant wherefor placed in the formula, possibly other factors, other than acre foot will disappear and further in exhibit 71 the engineers offered to the operator committee a report that will be considered a false report in approaching it here and offering exhibit 73, we have a more capable study and that produced a figure of 125,010 which is a figure basis of calculation and that is a figure that was concluded with a great deal of care so we strike it first (indicating) and offer this figure exhibit 53 (indicating), here is the correct figure.

Q. Now Mr. Kavaler, I notice that in computing the oil that reservoir volume in table nine exhibit 71 that the computation was made by segments A, B, C, D, and E which I believe represent the areas between the various fields [fol. 686] which are shown on exhibit 54, that is correct is it not?

A. That is substantially correct, yes, sir.

Q. Will you explain to the commission why you calculated those volumes as to those particular areas when it is split up as calculated as to those particular segments rather than some other measure, or unit of area?

A. In presenting, Mr. Commissioner, the entire engineering and geologist analysis counsel agains calls attention to the fact that the analytical data treated to the areas of his segments A, B, C, D, and E and counsel points out that these segments lie between the fields about which Mr. Montgomery testified and he asked why we chose to analyze our data in that respect, my answer is that it was analyzed because the engineers or geologists felt that there were fields of such magnitude to have separate sources of supply, Mr. Montgomery and I testified that the Madrano was

one source of supply, I am influenced in my opinion that the commission, after learning and many hearings has found that this is in fact one common source of supply and that we felt did not wholly separate one part of the field from the other, it is also a fact that the pool was developed areaized and that the first development was in segment B and largely and substantially gas occurred even before oil was discovered in segment C pressure conditions and the productive history of the pool is such that that is a matter of convenience and is a matter of most accuracy of arriv-
[fol. 687] ing at the limits of oil and gas to be distributed by each tract in the unit, the most convenient thing to do was to make the computations on an area basis there and that is the reason why all of the engineering data in this hearing was broken down.

Q. You say that it is more convenient to calculate the sand thickness by segments lying between the various fields?

A. Yes, sir.

Q. And that is your answer?

A. Yes, sir.

Q. That is the only reason that you did it?

A. Yes, sir.

Q. Now what convenience did it actually serve?

A. It served the convenience in one instance that this field has a greater throw on a lower structurally point and they may constitute barriers as Mr. Montgomery testified and that made it convenient to draw the structure maps in that lower structural point, taking into account the presence of field in that limited area it so happened in segment B as exhibit 72 shows that that was a substantial pressure depletion so as a means of accurately weighing the pressure, one greater thing in the pool is that it was more convenient to adopt these segments as a basis.

Q. Did pressure development have anything to do with computing reservoir volumn from sand thickness maps?

A. No, sir.

[fol. 688] Q. Well then, that difference in pressure is not a convenience then in computing the reservoir volumn from sand thickness maps by segments, is it?

A. Well, the reservoir volumn and the pressure, the sand

thickness, is one factor in the equitable distribution pressure is another factor.

Q. I was only inquiring about the sand thickness factor and wanted to say with that at the present time, now you can explain it some other way, alright.

A. Well—explain what you mean——

Q. I will ask you another question, I believe that you were telling the commission of the conveniences that computation of the sand thickness by segments was to the engineers making that calculation and was one convenience, I believe you testified the pressure depletion was different in different sections, is that correct?

A. That is true, yes, sir.

Q. My question was then did the sand, did the pressure depletion factor have anything to do with computing the sand thickness reservoir volumn?

A. If I understand your question, Mr. Bond, the answer is no.

Q. Well then, I just wondered if you can tell the commission what convenience is then?

[fol. 689] Q. Well, then, I just wondered if you could tell the Commission what convenience there was, then?

A. Well, I don't know whether you,—whether I will have to continue an explanation of that,—I thought I had made that clear to you.

Q. Well, you say you compute the reservoir volume from the sand thickness map?

A. Yes.

Q. Now, another convenience was computing the reservoir volume from the thickness map by segments?

A. Yes, that has been learned from long years of experience in Engineering.

Q. And the reason it is convenient to proceed by segment is that you have an area that is definitely confined by Geological Faults or boundaries.

A. Yes, that's a reason, there are other reasons.

Q. Well, is it convenient because those are geological boundaries?

A. Yes, those constitute boundaries but I'll have to call your attention to the fact that the degree is very limited.

Q. Well, I wouldn't ask you about that.

A. Well, I wanted to be sure that you knew about it.

Q. Do I understand you to say that the reason you used the different segments is because of these faults, just likes these lines on that map, is that the idea?

[fol. 690] A. Well, I'll have to answer that no, that is not true.

Q. Now, then, I'll ask you to state to the Commission the reservoir volume of that area that was calculated from the sand thickness map, how is that done?

A. It's by use of an instrument, the pelimimeter, an instrument for determining the thickness by the sand thickness map.

Q. Would you use a pelemimeter on a sand thickness map, what do you do?

Reporter's Note: At this time a recess is had and such recess the Commission is again in session and the hearing proceeds as follows:

A. In reply to the question last put to me before the recess, I will use Exhibit 56 as an example, which exhibit reflects the thickness of the gas bearing sand in the West Cement Medrano field. This map shows lines which are lines that cancel other lines of equal sand thickness. We will take the Palmer-Gulf-Sterba No. 3 well—that well carries a number below it, 105, which means the productive thickness in that gas portion of the field in this particular well. Near that particular location a line passes which is marked 100—that line passes through the Phillips-Fletcher No. 2 well in the Northwest Quarter of Section 34 and that well carries below it the number 102. Next below that line is a line marked 125. Now it is obvious that the line marked 100 and the line marked 125 embrace the area of the pool. A pelemimeter is an instrument which by tracing along the 100 foot line and back along the 125 foot line [fol. 691] determines the level in terms of acre. We may term that "X" acres, between the 100 and 125 feet, which can be determined by mere mathematics, the figure being 112½. The process I have just described, by using that process one can determine the total acre feet in the field or in the tract. Now the procedure in arriving at the

equity of this Application was we use Exhibit 56 in the gas production area and the other exhibit, 57, in the oil bearing area, to determine the amount attributable to the tract.

[fol. 692] By Mr. Reford Bond, Jr.:

Q. Now then, Mr. Kaveler, is the operation of a planimeter considered accurate?

A. Yes, sir.

Q. Therefore the result obtained from the operation of the planimeter on the Isopacious gas sand thickness map and also the oil sand thickness map will be as accurate as the sand thickness maps are correct?

A. That is true, yes, sir.

Q. And if the maps are in error then the planimeter result will be accordingly in error?

A. I think the answer is substantially "yes."

Q. Now then, state to the Commission the estimated difference in your opinion in feet, between the line on Exhibit 56 marked "105", which you testified about, no,—100 feet which you testified about and the line marked "75" which is to the North?

A. The difference is 25 between the two numbers.

Q. No, I mean in running lineal feet on top of the ground, or under the ground, by way of explanation, I call your attention to the fact that the distances those two lines varies at different points, you know that?

A. Yes, sir.

Q. Then, will you tell the Commission the approximate distance the two lines at the widest point Section 35, Southwest Quarter, extending over into the Southeast Quarter, and also appears to be the closest distance on the boundary line between Section 34 and 35.

[fol. 693] A. Yes, I can do it if I had a little yard stick. Exhibit 56 is drawn to a scale noted in the left hand legend of the Exhibit and if my yard stick is right, it is drawn to a scale whereby one-half inch equals 1000 feet. Now the contour lines marked "75" and the contour line marked "100" on Exhibit 56, lie apart, in the area of the so-called Sterba fault, a line amounting which is represented by 3000 feet at the points of closest convergence, which seems

to be on the section line between Sections 34 and 35, the lines lie apart to the extent of about 600 feet.

Q. Now how many control points do you have in the area within the lines at its widest point of convergence?

A. Well, the control points Mr. Bond are points applying to all the lines drawn, and furthermore, the control point as applies to line marked "75" is the same control point applying to line "100" and furthermore the line "75" and "100" are not drawn independently of each other. The number of control points are the minimum number, or the number of wells penetrating the Medrano sand within the general area of these control points. The Medrano sand. Mr. Montgomery numbered those for you. I could count the number of wells drilled.

Q. Will you look at the map and look at the Exhibit which Mr. Montgomery numbered, which is Exhibit 54 and state to the Commission how many control points are marked within the area of widest divergence between those two lines, that is in Section 35 and into the Southeast of 35 [fol. 694] and in a part of the Northwest Quarter of 35.

Mr. Williams: May I ask the witness a question for the purpose of raising an objection.

Mr. Reford Bond, Jr.: If the Commission please, I have no objection to it.

By Mr. Williams:

Q. Did you engineers have anything to do with this map or the contours or did they accept the work that was laid by them by the geologists?

A. The Engineers Committee or the Operators Committee had nothing to do with the Isopac map which Mr. Montgomery testified about.

Q. The Engineers simply accepted the lines as drawn by the geologists?

A. Yes, sir.

Mr. Williams: I think with respect to control points and how the map was drawn and all that is immaterial,—they went into that in detail with Mr. Montgomery who was on the Committee that drew it.

Chairman Bond: If he was working as an individual, it would be absolutely immaterial, but where he worked as a committee and testified he had working knowledge, working action of the committee, it is admissible.

Mr. Williams: Exception.

Chairman Bond: Exception allowed.

By Mr. Reford Bond, Jr.:

Q. Calling your attention to the area of widest diver-[fol. 695] gence between line "100" and line "75" on Exhibit 56 which is an area lying in the Southwest Quarter of Section 35, the Northwest Quarter of Section 35 and a part of the Southeast Quarter of Section 35, I call your attention to the control point marked on Exhibit 54 in that same area and ask you if it isn't a fact that there are only three wells drilled to or through the Medrano sand within the confines of those two lines in that particular area where they are the furtherest apart?

A. Mr. Bond your question is double-barrelled and I will have to answer with respect to the double-barrel nature of it, you asked the number of control points that were available for the consideration of the two contour lines.

Q. No, I didn't ask that, I asked you if it isn't a fact that there are only three control points in that particular area on this map?

A. That statement in its limited application to the problem is true.

Q. Which anybody can see from looking at the map?

A. Yes, if they want to look at it from a limited point of view.

Q. Let us look at it from a limited point of view, what is the sand thickness on control point,—what is the thickness of the gas sand in control point 39, which is the Palmer Gulf-Sterba No. 3 well and also what is the thickness of the gas sand in the Palmer Gulf-Sterba No. 5 in control point 36?

A. In respect to those two control points Exhibit 56 shows the thickness referred to, to be 105 feet and zero feet respectively.

[fol. 696] And yet your Engineering Committee attributed to this part of the Palmer Gulf lease in which the

No. 5 Palmer-Gulf well showed from actual drilling and testing operations to have no sand, no gas sand, a gas sand depth of between 100 feet and 75 feet, if that isn't correct?

A. The answer to the question is yes and no. The Engineering Committee did not attribute the thickness. The Geological Committee prepared that map. They attributed the thickness. Mr. Montgomery testified about it and explained it. I explaired having the contour as a mechanical possibility to have the thickness underlying between those contours. You appear to be alarmed at the fact that the Palmer-Sterba No. 5 has zero thickness. I think Mr. Montgomery adequately explained those circumstances.

Q. Could you explain that to the Commission?

A. I could give you my amateurish view of it.

Q. Didn't you testify to the Commission you were fully familiar with all the steps that the geological committee took?

A. Yes, sir, steps involved was to examine the data on Palmer-Sterba No. 5 to determine whether or not there was any productive sand in the Medrano in that well and the determination of the geological committee was that the productive thickness in the fault is that well was zero.

Q. Is that Palmer No. 5 Sterba producing from the Medrano sand?

A. I don't believe it is,—I will have to check,—The Palmer-Sterba No. 5 is not producing from the Medrano sand.

[fol. 697] Q. I will ask you if it isn't a fact that the data that was obtained from that well proved the existance of the Sterba fault rather than the thickness of any sand represented as lying between these two contour lines?

A. I *I* understood Mr. Montgomery's testimony, I think that is true, yes, sir.

Q. All right, now, you testified that there is an area about three feet long, how wide would you say from the Sterba fault up to the fartherest point on the contour line where it curves and turns North on the Phillips Sun Ray lease?

A. About 2121 feet.

Q. 2121 feet by 3000 feet in which the sand,—gas sand is from 100 feet to 75 feet thick?

A. Yes, sir.

Q. There is no well drilled in that area to determine actually how thick the sand is, is there?

A. I believe that is correct.

Q. There is one well, the No. 3 Palmer-Sterba, which is drilled just to the West of the 100 foot contour line which shows the sand to be 109 feet thick?

A. That is correct, that is one of the immed*ai*te adjacent control points to the contour you are referring to.

Q. Now, the nearest control point to the 75 foot line as it runs in this particular small area, we are discussing, is the Phillips No. 4 Farwell which showed a gas sand thickness of 61 feet?

A. I think that statement is substantially correct.

[fol. 698] Q. Well is possibly 600 feet North and East of the 75 foot contour line?

A. I think that is correct, yes, sir.

Q. From those two control points and possibly the Magnolia-Sames No. 6 well which shows a gas sand thickness of 68 feet and which well is approximately a little less than a half-mile East of the 75-foot contour line, was the only distance and concrete information that you had in this immediate area to give you a basis to say that the sand thickness is between 100 and 75 feet?

A. Yes, in the limited view which you are taking of the consideration of those contours, within that limited view the answer is "yes."

Q. At other places on that map the contours are closer together and the area determined by actual control points are much smaller?

A. I haven't examined wi*th* that thought particularly in mind. I would say that it probably is true.

Q. Therefore, the possibility for error in the smaller areas is much less than it is in an area so large as that which we were discussing at the point of widest divergence of these two contour lines?

A. I think the answer is yes, but I do not regard that as a significant challenge as to the accuracy of the sand thickness derived for the reason that those contour maps are not constructed with respect to one or two control points immediately adjacent to any contour, but all of the con-

trol points in the field contribute to the configuration which [fol. 699] that map reflects.

Q. Agreed that a well were drilled on the North ten acres of the Gulf-Palmer-Sterba lease to the Medrano sand, that it would probably to some extent change the contour line on Exhibit 56, that is correct?

A. To a minute extent, yes, sir.

Q. Well, of course you don't know how great or how minute?

A. The only way in which the point could be determined which you are offering is to strip off the over-burdened and examine the field in detail.

Q. You could examine the well?

A. You could make a minute alteration.

Q. It could be a great alteration?

A. It is highly improbable.

Q. Now, in computing the gas sand thickness and the oil sand thickness you did not, or the Engineering Committee, did not take into consideration any other factor than the footage thickness as shown on the Isopac maps Exhibits 56 and 57?

A. In determining the net productive sand thickness?

Q. Yes.

A. Exhibit 56 for the gas bearing sand and the other Exhibit comparable to it for the oil bearing sand were the only bases for arriving at the acre feet of the productive sand.

Q. And no other factor was considered except footage?

A. As a determination of acre feet of productive sand, area and thickness gives you acre feet, yes, sir.

[fol. 700] Q. I call your attention to Column "2" of Exhibit 53 which is entitled "Estimated Oil in Place, Thousands Barrels".

A. I have that, yes, sir.

Q. I will ask you to state if the sand thickness figure was used in the determining that estimated oil in place figure?

A. Yes, sir.

Q. Now, in answering one of my questions awhile ago in regard to sand thickness maps, you stated that the map showed equal productive sand thickness,—tell the Com-

mission what you mean by using the word "equal productive sand thickness"?

A. As it appears over the 100-foot contour which runs northwesterly approximately the whole of Section 35 and lying on that line marked "100" is 100-feet of sand in the Medrano field all of which is comparable one particle to the other.

Q. Other words, everything under that line you say has a uniform productivity?

A. Relatively speaking, yes, sir.

Q. Well, don't you know Mr. Witness, that Mr. Montgomery testified and that as a matter of fact the geological committee under your supervision and direction, did not consider any productivity factor at all in drawing these sand thickness lines but included all sands that contained any oil whatsoever?

A. I am aware of that, yes, sir.

Q. And don't you know that, let's say at a point well we'll say, on contour line 200 that at the point that it crosses the Amerada Beamer lease, it is entirely possible [fol. 701] as far as you can tell from the research that was made compiling this map, that there might have been 159 feet of highly saturated sand and fifty feet of sand that had very little saturation and low porosity and low permiability, whereas down here (indicating) on the Stephens-Plummer you would have had fifty feet of highly saturated sand and 150 feet that was poorly saturated and had low permiability and porosity, isn't it possible that that could be true, having no more information than you obtained from Exhibit 57 that was made and submitted to you by the geological committee, isn't that correct?

A. No, it isn't.

Q. Well, I will ask you if it isn't a fact that the geological committee did not take into consideration how much of any particular core that was taken from these control points, contained rich sand and contained poor sand?

A. The difficulty in my answering, I have no conception of the word "rich sand and poor sand".

Q. I mean rich sand that produces a large amount of oil,—poor sand that produces a poor amount of oil,—

I mean rich sand, well saturated, high permiability, high porosity and a lot of oil in place?

A. Only for the purpose of being helpful, I would suggest your conception of richness is to be determined in terms of potential of the well. You used the word productivity a minute ago, you must refer to potential of the well as synonomous to productivity.

[fol. 702] Q. We are talking about sand and not wells?

A. That is the difficulty I have in answering the question, as I don't know what it is to which you refer.

Q. I'm not sure you haven't heard all you can comprehend?

A. I will be glad to volunteer a short discourse with the hope of clearing up our misunderstanding.

Q. Go ahead.

A. The question whether or not there is an extreme degree of variance as between miscroscopic portions of this pool is to be determined by the conclusions that are drawn from a large amount of the information that is available. Now Mr. Montgomery has testified in response to your question there were some 85 wells drilled in the area of this Medrano field all of which contributed to the geologist's knowledge of it. In addition to that, there is offered in evidence a substantial amount of core data, all of which permitted the Engineering committee to draw certain conclusions with respect to the degree of saturation of the sand. We found the oil sand in this field all to be equally saturated. There is no substantial difference between any portion of the oil bearing sand in its native state in respect to the degree of saturation. We found that there is some variation in the potential of wells drilled herein as reflected by the variation and permiability of the rock as reflected by core analyses.

Q. This Unitization is not based upon usual well potentials as a basis for determining values, but this Unitization Plan is *is* based upon an equity distribution in measure [fol. 703] to the amount of recoverable oil contributed by each of the separately owned tracts. Now, any tract of this Medrano field which has a like porosity is going to contribute a like amount of recoverable oil, sand thickness being the same, for the reason that under the Unitization

pressure maintenance type of operation, well potential loses its significance. Well potential is only a competitive club that one operator holds over his offsets' head. In this Unit plan there is to be no competition so well potential loses all significance as a measure of value. Under the pressure maintenance gas injection program the value of one portion of the sand might have a permiability of ten millidarcies, another has a 1000, it loses this fact because operators are going to restore or maintain in this pool the amount of energy necessary to produce oil in any type of sand. So, from the standpoint of equity all we are charged with and responsible for is to measure for each separately owned tract the amount of oil in rock of such nature that the oil is recoverable under Unit operation and gives the Unit equity in proportion to that portion of the separately owned tracts. Therefore the usual methods in the minds of the layman of measuring value in terms of well potentials or any such related matter loses their significance and gives praise to the equity and fairness of the Plan presented.

Q. I didn't ask you about well potentials. I am asking you about the content of this oil sand in place?

A. Yes, sir.

[fol. 704] Q. I understand this division is not made on top of the ground, it is made on the total sand thickness down in the ground in the Medrano sand pool, but is made on a basis of the oil in place under each particular tract at the time Unitization takes place?

A. Yes, sir.

Q. With some variation which your Plan shows and which you testified about?

A. Yes, sir.

Q. Now, I will ask you if the Engineering Committee examining the Core Analyses on the various wells at the various control points did examine as to the porosity, permiability and saturation of the sand at those control points with reference to the entire thickness of the sand from top to bottom and reached a conclusion that in each case the permiability on each control point was average throughout in regard to the total thickness of the sand as shown by this Isopac map, is that correct?

A. The Engineering Committee, having the Core Analysis data at hand which reflected the character of the sand, after examination of the data concluded that insofar as the porosity factor is concerned, that the sand in area (A) should have assigned to it an average porosity of 15 per cent as reflected in Table (9) of Exhibit 51.

Q. You say they found it should have a porosity average, now did they find that the porosity of each control well did average up the same or did it average out the same on each core considering the entire sand from top to [fols. 705-706] bottom?

A. The Engineering Committee in examining the core data found that the weighted average porosity was 15 per cent.

Q. What do you mean by "average weighted porosity"?

A. That is a method of measuring porosity, well established in engineering practice, whereby in determining the average of porosity of all the sands that we covered in the cores, the porosity found for any particular interval of sand. So on a one-foot or half-foot basis is weighted in terms of thickness for which the porosity observation was made. For example, if there were one hundred feet of sand recovered which had a porosity of 20 feet and if there were 50 feet of sand which had a porosity of 30 per cent then the average porosity of the 150 feet is arrived by the product of 100 x 20 and the product of 50 x 30 which would yeild the weighted average porosity of 153 or about 20 per cent.

Q. Did the engineering committee obtain the average weighted porosity on every control point?

A. On every control point on which a core data was available,—there was core available data for at least 21 of the control points.

[fol. 707] Mr. Kaveler was recalled to the stand:

Chairman Bond: Gentlemen, you may proceed.

Reford Bond, Jr., examines the Witness:

Q. Mr. Kaveler, do I understand that the weighted average is merely an average taken in consideration all of the factors involved, is that right?

A. Yes, sir.

Q. Now then, when you stated that the contour line on the Isopac map of the oil sand thickness overlie and equally a productive sand thickness, you are assuming that the perocity and the saturation underlying that line is the same weighted average at every point along the line, is that correct?

A. That is substantially correct, yes, sir.

Q. And, as a matter of fact, it does not have the same weighted average at every point along the line, isn't that true?

A. The only answer that I can give to the question is it does have.

Q. I will ask you if it isn't *it* a fact that in determining the weighted average at each point along the line, it is necessary for you to determine the weighted average perocity in each well or each control point from that particular line is, like which that is from which the location of that particular line is determined?

A. It is necessary to arrive in the course data contained [fol. 708] from the control line, from which that is determined, I think that is substantially what you refer to in your question.

Q. Now then, the weighted average varied in the different control points, the weighted average of perocity?

A. The weighted average over the common sources of supply, yes, sir.

Q. Did the weighted average serve as to different control points in each segment?

A. I think that in your use of the word "Weighted" average, you are using weighted average in respect to each control point and I am speaking in the terms of all control points.

Q. Let's get down to the weighted average of each control.

A. That varied somewhat although the variation, although it may not be as large as you make it appear to be.

Q. That can very easily be determined from the examination of the core analysis?

A. Yes, sir.

Q. And we can do that right here so that the commission can see how much that vary made?

A. Sure.

Q. Now then, to say the least, the weighted average porosities at each control point in segment "A" varied, that is correct?

A. Yes, substantially, yes, sir.

Q. Now then, what you did in determining the porosity [fol. 709] figure used in determining the amount of oil in place in segment "A" was to take the average porosity of the weighted average porosity of each control point in that section, wasn't it?

A. I believe that is correct, yes, sir.

Q. Now then, would you determine the gas oil in place under each particular lease or tract of land owned by different companies or individuals, you used for the porosity figure the sector average, did you not?

A. Yes, sir.

Q. Now then, would it not have been more accurate to use the porosity weighted average obtained from each control point within each particular tract?

A. Not particularly, no, sir.

Q. There would have been a difference, would there not, in your final calculation as to the gas oil content under each tract if you had done so?

A. There would have been if it were true that the porosity was determined from the cuttings of the well bore itself and actually under the land under which that particular well bore was located, but it was well known that sandstones vary, nature varies, things in nature shows variation, what one must do is to take such observations so as to evaluate the variations in nature by combining the observation of natural conditions over a wide area, one can determine the average situation over that area more accurately and more definately than when one used the value [fol. 710] obtained at one single observation.

Q. That is your answer to my question?

A. It is.

Q. And in the event one of the tracts owners in segment "A" had a substantial-y higher porosity figure which would, if used, increase the gas oil contents under his tract,

you still would have used the average mean figure for the entire segment in figuring the gas oil contents under his tract.

A. I would if the figure was to be equitable to all parties.

Q. Is that what you mean when you say you want to rub out surface plans and operate according to geological constructed areas, is that right, or not, you don't have to make a long explanation.

A. What I mean when I recommend in my testimony that these surface lines be erased is to recommend a means whereby twice as much oil can be recovered from this common source of supply through unit operation. What I mean by fair and equitable is that if the pool is operated as a unit so as to deal fairly in recovering oil for each owner participating in that unit, they shall receive from the unit that which fair and equitable share of the production, it is fair and equitable, and it shall be determined in their share to what each owner contributed to the unit operation, I think it would be fair to you, Mr. Bond, to make in that statement which will explain the value point [fol. 711], in which I gave my answer?

Q. Give your answers to the commission please.

A. And that viewpoint is this, the viewpoint from which my answers were given to Mr. Bond, is from an attitude with this unitization, is drawn as to give each owner of interests in that field more oil and gas. This unitization is not an effort to take anything from anyone. It would be difficult to conclude that in operation, which would give everyone twice as much with the result in the taking away of anything the unitization did propose is to give parties more. In the cross examination questions, which have been given to me, are all questions directed at a microscopic minute investigation challenging the mathematical accuracy of the engineering facts on which the proposed unitization is based. I could appreciate the facts if that was taking away something from someone, that we should be challenged as to the mathematical process of which we took away, in any event, it will be impossible to be mathematically certain about a sub-surface reserve, but the mathematical certainty becomes all important when we attempt to get each and every owner substantially more than

they would otherwise have. When an owner is to get one hundred percent more as they question as to whether the data is 10 percent, ½ percent, or one percent, the accuracy places significance when the answer is always *is* in any event, you shall get 100 percent more than you will [fol. 712] otherwise receive, the answers or if we can't point that out, the cross examination questions are directed to the point in the face of the great things to be accomplished, the cross examination deals with the matters of trivial nature.

Q. Mr. Witness, you desire to work the division of the oil and gas out equitably, do you not?

A. Yes, sir.

Q. And, it is your desire in directing the formulation of the plans for the division amongst all persons entitled thereto to get each man his proportionate share, his share in proportion to the amount of oil and gas, he had in place under his land bore to the oil and gas that will be ultimately recovered that is still in place in the reservoir, that is right?

A. That is true and that is accomplished by the distribution of equity presented in this plan.

[fol. 713] Q. Now, then, I believe you told the Commission that after any certain common source of supply was fully developed that then it would be ready for Unitization?

A. Yes, sir.

Q. And unless it was fully developed that you couldn't obtain enough information upon it upon which to base Unitization?

A. That's correct, and in my opinion the West Cement Medrano field is fully developed.

Q. I want to call your attention to the fact that there is a well drilled in the area known as the Stephens-Petroleum Company-P-hlemann, No. 1, located in the North Quarter of the Northwest Quarter of Section 33,—I'll ask you to state how much area that well will effectively drain?

A. It will drain the entire common source of supply if given the opportunity.

Q. And how many years would it take to do that?

A. An indefinite number.

Q. By that you mean what?

A. Well, it might be all eternity.

Q. Well, would you consider that effective drainage?

A. Well, I don't know what the word, "effective drainage" means.

Q. Well, the producing of oil and gas in the West Cement Medrano field, in every way complying with the covenants of the lease.

A. Well, Mr. Bond that is a pretty,—I don't think one would try to drain a common source of supply with one [fol. 714] well.

Q. Well, have I made it clear to you by what I mean "effective drainage"?

A. No, sir.

Q. Well, I'll try it again,—I mean by effective drainage as would be expected by a prudent operator who wanted to produce oil commercially and who expected to make a profit on his investment and to comply with the terms of his oil and gas lease, regular 88 form and marketing the oil and paying his royalty and otherwise complying with the terms of his lease,—now reconsidering that source of production from a well, how much would this Stephens-Pohlemann No. 1 well effectively drain?

A. Well, my answer to the main question, drilling one well to each forty acres of productive area, I think would be considered effective drainage within the purview of that question.

Q. Will you take your pencil and draw a line around the area which the Pell well would drain.

Mr. Williams: I don't think — has any relationship whatever to the issues here.

Chairman Bond: Overruled.

Mr. Williams: Exception.

A. With some uncertainty in my mind as to what you mean by the area the Pohlemann well is capable of draining——

Q. Well, perhaps I didn't complete my question, let me complete the question,—will you take your pencil and draw a line around the area which, in your opinion, the Stephens-

Petroleum-Pohlemann well No. 1 will drain, taking into [fol. 715] consideration the other wells which are now drilled and are now producing oil and gas in that locality?

A. I don't wish to seem arbitrary, but any well drilled in a common source of supply doesn't produce from the tract on which it is drilled, only,—it produces from the common source of supply.

Q. So this Stephens-Petroleum-Pohlemann well is producing from a common source of supply?

A. That well is producing from the common source of supply under the rules of this Commission,—now, in my opinion, if this field is operated on a competitive basis, a fair and reasonable basis would be one well to each forty acres.

Q. Am I to take it from your answer that you are not able to draw a line around the area of which this well would effectively drain,—in other words you are not able to draw a line around the well, defining the area which that well will effectively drain?

A. I could draw a line around the well, but I will say that I think that a reasonable fair drilling program would be one well to forty acres.

Q. Then, I suppose your answer to my question is that by drawing a line around the well, or you would draw it around the entire pool?

A. Yes, qualifying that by my answer that I believe one well to each forty acres would effectively drain the [fol. 716] pool.

Q. Now, then, in your opinion, the development of the oil, to be fully developed in the West Medrano field should be one well to each forty acres?

A. I think that would be a conservative development program, yes.

Q. Will you state to the Commission the pertinent fact upon which you base that conclusion?

Mr. Williams: Objected to as not within the issues here.

Chairman Bond: The Commission remembers that he has testified that in his opinion it was sufficiently developed.

Q. What do you consider sufficient development, Mr. Kaveler, in competitive production, if that was your testimony?

Judge Brown: If the Commission please, it is my understanding that——

Chairman Bond: Well, there couldn't be any competitive drilling under Unitization, but you may examine the witness fully on whether or not this field has been sufficiently developed for him to determine the Unitization question.

Q. What acre spacing in your opinion, is necessary to determine all the Unitization question in the West Cement Medrano field?

A. No definite acre spacing.

[fol. 717] Q. Can you tell the Commission where you would begin and where you would leave off?

Judge Brown: Now, if the Commission please,——

Chairman Bond: The witness has testified that this field has been sufficiently developed for the determination of the factors under a Unitization Plan and [redacted] there are any factors, if there is any testimony to show that it isn't fully developed you may bring that out on cross examination.

Q. Well, Mr. Witness, I will call your attention to this matter of development,—for instance, the Phillips-Oakes lease,—I'll ask you to state how many oil producing wells are drilled on that lease?

A. The oil producing wells drilled on the Phillips-Oakes lease, in the Southeast of 34 are the Phillips-Oakes No. 2, No. 3, and No. 4—there is a gas well drilled on the Phillips-Oakes lease, well No. 1.

Q. I am not asking about gas,—how many oil wells?

A. Three.

Q. How many acres would you attribute to each oil well, or can you do that?

A. Yes, I can do that,—there are three wells, 110 acres that would be an average of one well to about thirty-three acres.

Q. Now, I will ask you to,—I will direct your attention

to the Gulf-Bell No. 1 well and ask you to state how many [fol. 718] acres would be attributable to that well?

A. Approximately eighty.

Q. I will call your attention to the Stephens-Petroleum No. 1 well and ask you to state how many acres would be attributable to that well?

A. From seventy-seven to one hundred fifteen.

Q. That is the Stephens-Petroleum-Pell?

A. Yes.

Q. Now, then, would you say that you should, for the purpose of Unitization, have a larger spacing area in the Stephens-Pell, and in the Gulf-Pell than in the Stephens-Oak-s well?

A. The question of spacing has nothing to do with Unitization, so I have no answer to that question.

Q. In other words, you can't answer it?

A. I have answered it.

Q. In other words, you can't answer it?

A. I have answered it.

Q. Now, will you produce the core analysis for the Gulf Pell well?

A. (Witness produces same)

Q. Now, you have the core analysis on the Gulf-Pell well,—can you read that core analysis?

A. I can't read this one, I'll try to find——

Q. How much core was recovered from that well?

A. Twenty-eight feet.

[fol. 719] Q. Does that show the thickness of the sand in that well,—twenty-eight feet, is it not?

A. I was going to read my records, but I'll take your word for it.

Q. That is the figure that appears here.

A. Well, that's correct.

Q. In other words, the complete core was recovered from that well?

A. Yes.

Q. Will you compute, from the core analysis, the weighted average porosity?

A. I will be glad to.

Q. And, Mr. Witness, will you also obtain your core-analysis on the Gulf-Sherrit well, No. 4.

Mr. Williams: If the Commission please, the witness tells me this is not just a simple calculation, that it will take possibly an hour to prepare himself to answer the first question, and now he has asked another one, which may take two hours.

Mr. Reford Bond, Jr.: If the Commission please, the witness has shown that the Committee made all these calculations and if they have them, I'll be glad to have those calculations instead of requiring the witness to go through it again. I think it is very material to have this testimony. [fol. 720] By Chairman Bond: It isn't a question of time or it isn't a question of the amount of material when the question of justice is at stake. We try lawsuits and try to do justice and equity between the parties regardless of time or trouble. If you gentlemen would like time, the Commission will give you time.

By Mr. Reford Bond, Jr.:

Q. Gulf-Sherrit No. 4, then we would like to have the same thing on the Amerada-Beamer No. 1,—do you know whether or not you got a fuil core on that one?

A. Twenty-four out of seventy-four, yes, sir.

Q. And also the Phillips-Oak-s No. 3, and also the Phillips-Margaret No. 1, and the Stephens Petroleum-Pierson No. 1, and the Amerada-Hoartshorn No. 2 and the Amerada-Edwards No. 1, and the Anderson Prichard-Pickard No. 1. Now that gives you two wells in each segment and should give the Commission a fair representation of how much difference there is between the porosity?

A. Of course, I can give you that condition now.

Q. Well, give us the porosity figures then the Commission will know the difference?

A. I can give you the average porosity figures.

Q. On those particular wells?

A. Yes, sir.

Q. That is fine, that is what we want. Are they taken from Core Analyses?

A. Yes, sir.

[fol. 721] Q. And computed from the Core Analyses?

A. Yes, sir, over a period of four months.

By Chairman Bond: Now, do you gentlemen have any agreement as to when the figures are to be furnished?

By Mr. Reford Bond, Jr.: The figures are to be furnished, he says he has them now.

By Mr. Williams: He says he has conclusions.

By Chairman Bond: You can't tell whether a lawyer might differ what the conclusion would be, if he had figures to cross examine on,—you gentlemen are trying this lawsuit, if he has conclusions you can save time.

By Mr. Reford Bond, Jr.: The conclusion was obtained by the particular method of calculations based on the core analysis.

By Mr. Reford Bond, Jr.:

Q. If you got up to the blackboard and calculated it now, you would use the regular approved method for such calculation and would arrive at the same conclusion?

A. I hope,—yes, sir, I would.

Q. You know you would?

A. Yes, sir.

By Chairman Bond: You may proceed on that understanding.

By Mr. Reford Bond, Jr.:

Q. That is your testimony?

A. That certainly is.

[fol. 722] Q. All right.

A. Weighted average porosity in the Gulf-Pell No. 1 is 13.30 per cent. The weighted average porosity in the Gulf-Sherrit No. 4 is 14.50 per cent. The weighted average porosity in the Amerada-Palmer No. 1 is 16.50 per cent. The weighted average porosity in the Phillips-Oaks No. 3 is 12.75 per cent. The weighted average porosity in the Phillips-Meeker No. 1 is 18.50 per cent. The weighted average porosity in the Stephens-Pierson No. 1 is 17.75 per cent. The weighted average porosoty in the Hartshorn-No. 2 of Amerada is 19.10 per cent. The weighted average porosity in the Amerada-Edwards No. 1 is 16.58 per cent. The weighted average porosity in the Pickard No. 1 of Anderson Prichard is 16.2. I wish to make an additional

statement in respect to the Oaks No. 3 Phillips Petroleum Company, the 12.75 per cent porosity of it, I previously gave applies to the interval of 5790 to 5810 feet,—the weighted average porosity in interval 5726 to 5853 is 15.85 per cent,—the weighted average porosity 5880 to 5895 is 17.50 per cent.

Q. Do I understand from that, that the well as a whole, that it is 12.75?

A. No, sir.

Q. Well can you give the average weighted porosity for the well as a whole or do you have sufficient core?

A. Yes I have sufficient core. I notice again that our tabulation, the additional core for the Phillips-Oaks No. 3 for the interval 5924 to 5975, the average porosity in that interval was 14.74. I would like to strike from my state-
[fol. 723] ment the porosity I gave for the Phillips-Oaks No. 3, the interval 5726 to 5853 is 15.85 which is the porosity on the Oaks No 2. We have the whole tabulation of those, if you would like.

Q. I would like for you to testify into this record as to, as you said you could do from accurate calculations the weighted average porosity of the Phillips-Oaks No. 1?

A. The Phillips-Oak-s No. 1 has a weighted average porosity of 19.07.

Q. I beg your pardon it is the No. 3, I misread the figure on the map?

A. I could do that for you, this Phillips-Oaks No. 3, the porosity data on that interval from 5790 to 5810 is 20 feet and that has a porosity of 12.75 per cent. The interval from 5850 to 5895, I beg your pardon, 5880 to 5895, 15 feet, has a porosity of 17.50 per cent, and the interval 5924 to 5975, 51 feet which has a porosity of 14.74 weighted for that interval. Each of the porosities I gave you with the corresponding interval is the average weighted porosity for that interval,—to get the weighted porosity for the overall,——

Q. Do you have the weighted porosities for the depth from 5810 to 5830?

A. I imagine there was no core recovery there, I will have to check the records on that and see. In the interval 5810 to 5880 which is the interval you referred to, that

interval was drilled without coring. I think that is prob-
[fol. 724] ably true of the next vacancy there,—5895 to 5924.

Q. In other words, you do not have a complete core on the Phillips-Oaks No. 3?

A. No, sir, nor is one necessary.

Q. In the absence of a part of the sector how is that lack substituted?

A. It is a fair and reasonable conclusion that the three intervals actually cored are representative of the entire section at that particular location of the common source of supply.

Q. I will ask you to turn to your Core Analysis on Phillips-Oaks No. 2 well, and state to the Commission how much of the core was recovered in that well?

A. Philips-Oaks No. 2 127 feet of core were recovered at the 143 feet of formation drilled.

Q. Do you have the weighted average porosity computed on that well?

A. Weighted average porosity of the Oaks No. 2 is 15.85 per cent.

Q. Now, Mr. Kaveler, will you take the Core Analysis on the Gulf-Pell No. 1 and figure it out on the board,—if the Commission please that is the separate weighted averages?

A. I can demonstrate to the Commission on the process of weighted averaging with the example of the Oaks No. 3 which would simpl-y the figures.

Q. Would you use the Pell No. 1?

A. You want me to go through the arithmetic?

Q. If you would do that inasmuch as you separated,——
[fol. 725] A. Do you desire,——

Q. With the Oaks No. 3.

A. To state the in succession,——

Q. The process you,—should follow with the Oaks No. 3 if you were to follow that same method?

A. The reason I was confused about is, that the Pell drilled 28 feet of Medrano sand and recovered 28 feet of core and the weighting has been done prior to this hearing and the weighted average porosity is 13.80. Now, the only thing I can do other than that is to take the Core Analysis, copy down the porosities for each foot and dem-

onstrate how that number was arrived,—that I am willing to do if you wish?

Q. How long would it take you to do it?

A. It would take about half an hour to write on the board to show all the arithmetic involved.

Q. I don't believe it would be necessary to take the trouble to do that and since you have given us the average weighted porosity on the Phillips-Oaks No. 2, I believe we can let the matter go on the Phillips-Oak-s No. 3, because that will give us two wells in Sector "B".

A. You wouldn't object to my concluding the information in respect to the Oaks No. 3.

Q. Well, I would suggest in your method that you use that you strike an average between the 13.50 figure and the 12.75 figure to fill in the gap between those two, just [fol. 726] as a matter of equity and weighted averages?

A. You have given me a direction what you want me to do,—would you mind to my volunteering equity and permit me to fill the vacancy in what I consider to be the fair and equitable manner.

Q. Since you are using weighted averages did you weight the average and fill in the gap that you averaged between 12.25 and 17.50?

A. Well, I can give you that figure and that is your figure and not mine.

Q. Isn't that weighting it?

A. No, that is averaging of the two figures?

Q. That is averaging the two figures, wouldn't you be weighting it to fill in the gaps on which you didn't have anything to weigh?

A. You would be filling in the gap by averaging up of both.

Q. You propose not to fill in the gap at all?

A. I propose to fill it in, in the manner in which I consider fair and equitable.

Q. Well, you have twenty feet of sand at 12.75?

A. Yes, sir.

Q. Did you skip 70 feet of sand?

A. Yes, sir.

Q. Then you have 15 feet of sand at 17.50, then you skip 29 feet of sand, then you have 51 feet at 14.74,

now, in making weighted averages you figure the porosity for each foot as a unit, isn't that correct, and then you take the average porosity of all these feet, isn't that [fol. 727] right?

A. Well, yes, sir.

Q. That is the way you figure weighted averages, isn't it?

A. Well, I think I can explain that to you this way,——

Q. Now then, how can you make a fair weighted average if you are going to omit 70 feet between the first two numbers and 29 between the second two?

A. Well, of course Mr. Bond, there are two viewpoints in this matter. The viewpoint you are adopting, porosity average of 12.75, the fact that occurs, you draw the presumption that the next foot will have a porosity of 1.75, that isn't a valid conclusion.

Q. Now I call your attention to the fact that you are using 20 feet of 12.75, and you are omitting 70 feet altogether, and then you use 15 feet at 17.50 and then you omit 29 feet, I say there is an ommission there and that you cannot make a true weighted average with ommission,—if the Commission please may we have a recess?

A. I don't know whether I can answer your question, Mr. Bond, because it isn't clear in my mind what it is you are inquiring about.

Q. Well, never mind, we will skip the Oaks well, if your lawyer wants to offer any evidence on that he can do so.

A. I have the core graph for further questioning between us and I might be able to be of assistance to you.

Q. I think you have been quite an assistance in this matter now, all we need at this time, I don't want to take up any more of the Commission's time on this point,—now [fol. 728] then I call you attention Mr. Kaveler, again to Exhibit 53, Column "2", Estimated Oil in Plate One Thousand Barrels, I will ask you to state to the Commission what facts and factors and methods you used in arriving at that figure.

A. In deriving Column "2" from Column "1", the proceedure with respect to each separately owned 20 feet tract was as follows, the number of acre feet of productive sand beneath each tract multiplied by the per cent porosity ex-

pressed as a fraction and multiplied by the reservoir volume factor.

Q. What is the reservoir volume factor, if I might interrupt?

A. That is the factor which is determined as the ratio had when the volume occupied by one barrel of oil in the stock tank is divided by the volume that that one barrel occupies in the reservoir, that is the reservoir volume factor. It expresses an engineering fact, which fact is that crude oil shrinks in volume as between the reservoir and the stock tank.

Q. Crude oil in the stock tank is,—has a smaller volume than in the space it took up in the reservoir because of the water and the gas that gets away?

A. And temperature decreased, smaller in volume it's connate equivalent.

Q. Go ahead, I want to get that clear to the Commission in the record.

A. Then those factors are further multiplied by a factor which is 100 minus the percent connate water and then in order to get the answer in terms of barrels of oil in [fol. 729] which every one is interested, the conversion factor 7758 is also included as a factor.

Q. That represents what?

A. That is the conversion, that represents the fact that there are 7758 barrels in one-acre foot of volume and the product of all those factors are barrels of oil in stock tank equivalent in the acre feet attributed to the separately owned tract and under initial conditions.

Q. Of course all of that oil can never be produced, that is correct isn't it?

A. May I observe so we won't be confused. This applies to the initial conditions in the reservoir. All of the oil cannot be produced. So, if one is interested in the reservoir associated with that volume of oil then a recovery factor must be applied.

Q. Just a minute before we get to that, please sir. The porosity factor that you show, that is the per cent porosity over 100 is the weighted average porosity that — were discussing just a moment ago in your testimony, is that correct?

A. Yes, sir, or we could further show that it is the per cent porosity attributable to that particular tract in question.

[fol. 730] Q. Now, in computing the estimated number of barrels of oil in place in column number two, you used a consistent weighted average porosity figure for each lease in segment "A" did you not?

A. Yes, sir.

Q. Then, the same is true as to the calculations on leases in segments "B, C, D, and E"?

A. Yes, sir.

Q. And you did not use the weighted average porosity factor found in the particular wells on the particular tracts, that is right isn't it?

A. That is right for the reason that the weighted average of the porosity of that particular well because it was not attributable to that tract.

Q. But you didn't give each particular tract the weighted average porosity that was found in the wells drilled on the tract but did give them an average weighted porosity of the porosity of all wells drilled in the particular segments in which that tract was located, wasn't it?

A. That is right for the reason the porosity in the area is the best way to measure the porosity in the tract in question.

Q. And the fact that you had caused some tracts to have a greater amount or show a greater amount of oil in place and some tracts a well—amount of oil in place in this [fol. 731] column two, exhibit 53 they would have had, if you had used the average weighted porosity figure obtained from the wells drilled on each particular tract, that is right, isn't it?

A. The statement that you have made is correct but the variation would result, had you followed equitable procedure, it would have been trivial and as to the increased value of the oil and gas obtainable to the unit operation——

Q. You think, don't you believe, I will put it that way, that because you are proposing unit operation and increasing the amount of recoverable oil, that you should — anything away from any interested party or give anything any more to any interested party than he would be en-

titled to because of his property rights and property interest in the tract included in the unitized area, is that true?

A. We are not taking away from any party out there, we are proposing a more conservative method of operating the field which would, will certainly, with all certainties that manking can possess, will give them more. The arithmetic involved is attested by counsel, as I understand it and this shows how the engineering data was put together, the applicant in the case has followed well established rules for evaluating oil sands and the evaluations have very well established procedure which counsel calls attention to are actually very minor deviations which if proposed, is inconsequential minor deviations so if his method is adopted, then the attribution of equity, the well will not be substantially different than proposed or Mr. Counsel assumes, in the absence of unitization, the spe-
[fol. 732] cifically owner of the tract will know what his porosity is and will get a fair treatment and only one half reserve from the pool.

Q. Is there any reason why the oil in place shouldn't be figured on separately on each particular lease giving to each lease the porosity figure which it's own well shows?

A. In order to answer your question, I think that the counsel suggests that the porosity used in connection with Gulf Pell No. 1 be 13.30 percent rather than the average for the general area around the Gulf Pell used it was 15 percent. Now, if that practice were adopted then counsel would have to suggest what percent porosity would be attributed to the Stevens pell well would be the westwardly adjacent well, there were no core data obtained on that well, so from a practical standpoint of view it's impossible and impractical to core every well in common sources of supply. There are many wells in which those core data did and, if counsel suggests were followed, there would be more more equity and no more conservation practices in the state of Oklahoma. In view of the fact that the counsel has dealing with the inimication doctrine and it's fair to use porosity of all samples of sand in the area in order to follow a well established rule in science that the average of all things of nature eventually is a fair measure of conditions to be encountered.

[fol. 733] Q. I will ask you to back up there to the map again in the area to the Stevens petroleum domb bowl well and I will ask you if it isn't true that it is necessary to estimate these geologists contours lines that represent the top and bottom of the sands and which resulted in an estimate of thickness of the sand in that area because of a lack of information.

A. I think, Mr. Montgomery, testified as to the thickness of the oil-bearing sand in the Stevens Domb well, it is established as well as it could be.

Q. Yes, under the circumstances, but because of the lack of actual information, isn't it a fact that these contour lines were broken and drawn from broken lines to show that the actual information was not present there and that these matters had to be established.

A. Of course there are two sets of dotted lines on exhibit 54. One set is to show the oil-water content and the other set is the broken contour lines. I think this broken contour line is used to indicate that after the sand thickness is determined——

Q. Don't you know?

A. I will answer your question.

Q. You say "think" don't you know?

A. I will start over, there are two sets of lines. One is a set of broken lines that designate the oil water content and the other set of broken lines is broken contour lines re-[fol. 734] flecting the structure on exhibit 54. The lines were placed broken because of uncertainty in the well that you alleged that the thickness of the oil bearing sand is known as Mr. Montgomery testified to. Those lines were broken to show that the thickness of the sand on one lease was reduced to fifty percent of it's value in order to compensate to sand conditions and indicated lower productivity of sand on that lease so that the broken lines are to be a reminder that the gumbo lease was different it was penalized fifty percent to compensate all characteristics of the sand on that lease.

Q. Is that true of the Amerada McClaren leases at the *the* southeast part of the structure of the pool?

A. The Amerada McClaren lease is reduced fifty percent in the equity computation. The Amerada McClaren, North

half of the southwest of the southeast being tract 69 and the Amerada McClaren, Northwest Southeast tract number 70 were reduced fifty percent in equity in the area, where the dashed lines are drawn also.

Q. What about Anderson-Prichard?

A. I will add to the Amerada McClaren tract 67 Anderson-Prichard McClaren "A" and Anderson-Prichard "B" was likewise reduced fifty percent, Anderson Ray likewise that is tract 66, it was reduced fifty percent.

Q. What about Anderson-Prichard Prentiss "B" was it reduced?

A. No, sir.

[fol. 735] Q. I call attention to the fact that there are broken——

Mr. Williams: Did this witness draw this map?

A. No, sir.

Mr. Williams: The witness that did could tell what he meant by drawing those lines?

Reford Bond, Jr.: It was under his supervision.

Mr. Williams: Now the geologist work wasn't done under his supervision.

Reford Bond, Jr.: He said that he gave the orders.

Mr. Williams: As to the results he wanted and as to what geologist information that they wanted as to the map that was drawn.

Reford Bond, Jr.: I suggest that the witness be permitted to testify if he knows, he can tell.

Commissioner Weems: You can recall Mr. Montgomery.

Mr. Williams: He is right here he knows what that meant.

Commissioner Weems: The objection is well taken. Sustained.

Reford Bond, Jr., continues with the Witness:

Q. Did I understand you to testify, Mr. Kavaler, The Anderson-Prichard McClaren leases and the Amerada McClaren leases and the Anderson-Prichard Ray leases were reduced fifty percent?

A. Yes, sir.

Q. Because why?

[fol. 736] A. Because of lack of development of immediate area of those leases those Amerada Anderson-Prichard leases being at the extreme end of the pool and the dry hole on the Gumbo.

Q. You mean lack of actual developement?

A. No, sir.

Q. What developement do you mean?

A. It was evident that the productivity normally should be reduced fifty percent in order to be fair and equitable to all parties.

Q. Will you tell the commission whether or not there has been any actual drilling or actual operations on those leases?

A. Immediately on those leases, there has been a well drilled on the Gumbo lease, no well on the Anderson-Prichard Amerada McClaren or Anderson-Prichard Ray to which we are now referring, but the productivity of those leases is established by the developement of the pool today.

Chairman Bond: The commission will recess for ten minutes.

[fol. 737] Q. Mr. Kaveler, in arriving at the figure in column 2, Exhibit 53, being designated as "Estimated Oil in Place", I'll ask you to state whether or not the porosity figure in line 2 of table 9, Exhibit 71, was used to arrive at those figures?

A. (No answer.)

Q. In other words, in segment A, the figure 15 was used?

A. Yes, for the well located within the segment designated in Table 9, the porosity figure shown for that segment was used.

Q. For segment A, the figure 15 was used?

A. Yes.

Q. For segment B, C, and D the figure 17 was used for porosity and in segment E the porosity figure was 16?

A. That's right.

Q. Now, I will ask you to compute the percentage of difference between the porosity figures of 16 and the porosity figure of 13.30 which you say is the correct figure for the Gulf-Pell No. 1?

A. 15% is the number.

Q. Well, what would be the percentage of increase if you used a 15 instead of 13.30?

A. Well, one way to express that, in order to get the largest number,—.17 is 1.28 x 13.3.

Q. Then, if you use 13.3 percent you would have 12.8 less?

A. No, 12.8 more, the other number is smaller.

Q. Do you consider 12.8 per cent as minimus?

A. Yes, in the equity, as it appears as the difference is in-
[fol. 738] significant.

Q. Would you figure, with your slide rule, on the Blackboard the difference in the Gulf-Pell estimated oil in place by using 13.3 percent of porosity in one instance and 15 per cent porosity in the other?

A. You desire me now to calculate how much oil in place would be attributed to each, in the event 15 per cent were used and in the event 13.3 per cent were used?

Q. That's right.

A. With 15 per cent, 2,840,000 barrels, as shown on Exhibit 53,—for 13.3 per cent, if that figure were used the answer would be 2,520,000 barrels.

Q. The difference there is 320,000 barrels.

A. The difference there is 320,000 barrels,—now, if you will bear in mind there are 97,000,000 barrels in the reservoir, then——

Q. Now, excuse me just a minute,—Unitization under this Plan you propose,——

A. I didn't finish my answer to that other question, well——

Q. Well, go ahead, maybe it will help me ask you another one.

A. The amount of oil involved, 320,000 barrels is one-third of one per cent of the 97,000,000 barrels in the pool.

Q. Can you now compute the estimated oil recovery from the Pell lease, using 13.3 porosity factor applying the 35½ per cent recovery factor, I believe that is the factor you use in Exhibit 53 shows it to be the recovery will drop for
[fol. 739] that tract 1,010,000 barrels. Now, if the poros-

ity had been 13.3 per cent the drop reserve under this Plan of Unitization would have been what?

A. 895,000 barrels is the difference and the difference of the drop reserve of the two porosity figures, the difference between the two would have been 115,000 barrels.

Q. Now, then, how many years do you estimate it would take to recover this 35.5 per cent?

A. By what method?

Q. By the Unitization method?

A. About half the time it would take in the absence of Unitization,—under Unitization it would be recovered in about half the time.

Q. Could you give me the number of years?

A. Well, I don't want to state the number of years, about fifteen to twenty, whereas in the absence of Unitization it would be stretched out from twenty to thirty.

Q. Then, over a period of thirty years, with oil at $2.00 per barrel that would mean $230,000.00 to the Gulf-Pell lease?

A. Well, ultimately the percent of porosity would be substantially less.

Q. $230,000.00, how much would that be per year?

A. Well, that would be represent a number of dollars.

Q. That would provide pretty good pay for your Executives, wouldn't it?

A. Not much,—in other words the 115,000 barrels to which you refer, Mr. Bond, is oil that will be recovered [fol. 740] ultimately but not in the present year. The market value of that amount of oil would be almost insignificant.

Q. You did not use the permiable factor in determining the amount of oil and gas to which the various persons owning the various tracts are entitled, did you?

A. Well, I have difficulty in answering that, because you say I didn't use the permiable factor.

Q. Well, I say you didn't use the permiable factor in determining the amount of oil and gas the owners are entitled to have under Unitization?

A. I still have difficulty in answering that question.

Q. Well, I'll ask you again,—you did determine in your Plan and in your calculations, the amount of percentage

of oil and gas which each interested party was entitled to have?

A. Entitled to have insofar as that factor was part of the equity formula.

Q. Well, wasn't that the result of your computation?

A. Well, as to the amount of the production, yes.

Q. I will ask you if it wasn't your purpose in formulating that plan to divide the oil and gas among the persons entitled to it?

A. Equitably, yes.

Q. In doing that did you use the permiable factor?

A. Yes.

[fol. 741] Q. Tell the Commission how you used it?

A. We used it in determining sand was productive,—to that extent it was used, in determining production.

Q. Was that used by the Geological Committee?

A. By the Engineering Committee.

Q. Now, tell the Commission in what respect this permiable factor was used in computing the estimated oil recovery allotted to the tract.

A. By examination of the core data,—it was the conclusion of the Committee,—we will see on Exhibit 57 and 56——

[fol. 742] By Mr. Bond:

Q. Did the Engineering Committee make computations to back up that finding?

A. They examined the core data and came to that conclusion.

Q. In addition to their examination did they make computations and determine the matter by mathametics?

A. I don't think that matter is subject to mathametical analysis, at least not to my knowledge.

Q. Then in other words, they did not use a mathametical analysis on the permiability data obtained fr m the core analysis?

A. Permiability data is not susceptible to core analysis.

Q. By that I infer they didn't use it?

A. They couldn't use it.

Q. I want you to get out your core analysis again on the Stephens-Pell No. 1, we have been using that, I mean ex-

cuse me, the Gulf-Pell No. 1, which is your control point 74 and also the core analysis on Gulf-Sherrit No. 4, did you have your core analysis on your Gulf-Pell?

A. Yes, sir.

Q. You show 20 feet of the core were recovered in that well, 28 feet?

A. 28 feet, yes, sir.

Q. Which is the entire sand thickness?

A. Yes, sir.

Q. Now, will you state to the Commission the permiability by feet as it appears on that core analysis?

A. I will read it in succession in numbers which represent [fols. 743-744] permiability observations?

Q. Will you also read the footage that is applicable to it?

A. Do you want this in minute detail or general?

Q. Minute detail, will you state, set out the porosity at the same time?

A. I suggest I could give you better information on five foot intervals,—5640.

Q. That's all right, you make it in five feet intervals.

By Mr. Williams: I was going to suggest this, I am a litfle tired myself and I think everybody else appears to be, and the witness appears to be, and I was wondering if it wouldn't be best to recess for the afternoon and let the witness put it on the board.

By Chairman Bond: If it is agreeable to the parties, it is agreeable to the Commission.

By Mr. Reford Bond, Jr.: I have no objection to the recess.

By Chairman Bond: Recess until 10:00 o'clock in the morning.

[fol. 745] Chairman Bond: Gentlemen are you ready to proceed in CD 1308?

Mr. Williams: Yes, your Honor.

Reford Bond, Jr.: We would like to have Mr. Kavaler return to the stand.

Mr. Kavaler recalled to the stand.

Reford Bond, Jr., examines the Witness:

Q. You are the same Mr. Kavaler who was on the stand at the close of the hearing yesterday?

A. Yes, sir.

Q. Will you refer to table nine of exhibit 71, lines or items 16, 17, 18 do you have the table Mr. Witness?

A. I have, sir.

Q. And I call your attention to the fact that those three items are first, the percent of interstitial water in the sand, second: the percent of area approved by gas in solution and the third; percent occupied by oil, is that correct?

A. If you will permit me, I will correct the reading of line 17 and ask that you strike from your statement "in solution" followed by the area that is volumn occupied by gas.

Q. Alright, were those three figures used in computing the estimated oil in place as appeared in column two of exhibit 53.

A. Yes, sir.

Q. Now when you placed your formula on the blackboard, showing the commission how you arrived at the estimated oil in place of column two of exhibit 53, I will [fol. 746] ask you if you showed that you considered the gas, the volumn occupied by gas or if you showed in that formula the area occupied by oil, the volumn occupied by the oil.

A. The equiation placed on the board yesterday was a demonstration of how——

Q. You arrived at those figures in column two, exhibit 53.

A. Let me answer.

Q. I asked you the question yesterday of course, I know.

A. The calculation placed on the board yesterday, Mr. Bond, was the calculation on how to compute the oil based on the acre foot of sand beneath the tract and the characteristics of the lake and the liquid therein. You now point to line 17 of table 9 and inquire about the meaning of that line which is a step beyond the calculation which I detailed to you yesterday. The calculation yesterday was the first step, now you point to the second step and line 17 is taken in computing the equities beyond column two in exhibit 53 to which you referred, I can explain the production of——

Q. Now, I will ask you if you won't put your formula back on the blackboard so the commission can see it.

A. Due to limited space I will have to get a new blackboard or ask consent to erase this, that you ask me to put on the board (indicating).

Q. That has to do with the core analysis, sand porosity [fol. 747] and you have already testified about that porosity. What we are going into is sumnability you can erase that and put the formula on the board.

A. I shall write on the board a product of a number of factors the product of which permits the computation, the amount of oil in place for a stated sand volumn, the sand volumn being expressed in acre feet.

Q. Mr. Witness, before you go ahead with the formula, I want to ask if this is the formula that you used in obtaining the figure or figures appearing in column two of your exhibit 53.

A. The formula that I wrote and that I wrote yesterday will produce the figures in column two.

Q. The formula that you wrote now is the same as yesterday?

A. The number 7758, the standard conversion factor is and it is the volumn (Reporter's Note: Below is a table placed on the backboard by the witness).

$$7758 \times \text{acre ft.} \times \frac{\%\ \text{porosity}}{100} \times \text{reservoir volume factor} \times -\left(\frac{\%\ \text{Connate water}}{100}\right) \text{ equals the volume of south tank oil}$$

for the stated acre feet which gives the oil in place which is the first computation in the line theory of computations necessary to pass from acre foot into the final equality formula, now let the product obtained from the formula that I have written for recovery factor.

Q. The acre foot factor is the figure in column one of the [fol. 748] exhibit entitled "oil zone acre foot", is it not?

A. Yes, sir.

Q. The figure 7758 means that there - that many feet?

A. Barrels.

Q. Barrels, pardon me, volumn area in an acre foot of sand?

A. That is substantially correct.

Q. And that figure was obtained by what process?

A. By measuring the net productive sand thickness as reflected in geology, exhibits 56 and 57.

Q. That is how you got the figure in column one, exhibit 53?

A. Yes, sir.

Q. By measuring the sand thickness, now turn back to the formula, how did you get the figure 7758?

A. Well, that is the figure determined by United States bureau of standards.

Q. Yes, and how did the United States Bureau get that figure?

A. International agreement, that is an agreement of weights and measures and it so happens that——

Q. I will ask you this, you were talking about International standard weights and measures I will ask you this, isn't it a fact that you took a volumn of your sand and you determined the volumn as it was and then you took the volumn of the flow source and if that wasn't how you got it, isn't that about right?

A. —

[fol. 749] Q. In determining the number of barrels to an acre foot do you measure the length, the width and breadth and multiply all three together?

A. Yes, the width A, the depth B and C, A, B, C, expressed by acre feet. Petroleum in the ground is composed of both crude oil and gas, so that in the Medrano pool at about 2000 pounds pressure there are about 400 cubic feet of gas, the temperature is about 116 degrees Fahrenheit. When that oil is produced sub-tanks at the surface it is reduced from 2000 pounds on down to zero,—it is reduced from 116 degrees Fahrenheit to about 60 degrees or 70 degrees,—the result of that is that the oil in the reservoir produces something less than a barrel of stock-tank oil or 0.84, about eight tenths of a barrel. Now, next, connate water,—the connate water appears on item 16, table 9.

Q. Of Exhibit 71?

A. Correct.

Q. And for each of the five segments, A, B, C, D, and E?

A. Yes.

Q. Now each of those segments, the figure 20 is shown and I'll ask you if the sum of lines 17 and 18 added together would make up the other 80 per cent?

Q. Well, you suppose,—don't you know?

A. I suppose so.

A. Yes, I have a little difficulty,—my answer is yes they do.

Q. Now Item 18 is percent total pore volume occupied by oil at time of the discovery,—I note that that figure [fol. 750] varies in the different segments, is that correct?

A. Yes.

Q. Now, state to the Commission how that was computed and from what data and information those figures were computed?

A. Do you refer to line 18?

Q. Yes, on Table 9, Exhibit 71.

A. The per cent of total pore volume occupied by oil at time of discovery was computed by—from 80 per cent shown in line 17.

Q. Which is the present total pore volume, the per cent of total pore volume occupied by gas at the time of discovery?

A. No, it's the percent occupied by oil.

Q. You said line 17 computed, did you not?

A. Yes, line 17 is the percent occupied by gas.

Q. Now, how did you determine that the volume occupied by interstitial water,—how is that determined?

A. That was determined from the characteristics of the Plan and based on numerous Engineering methods,—it is an estimate based on many observations of the properties of cores.

Q. What observations did you make of the cores to determine the interstitial water?

A. One of the methods,——

Q. Well, just what method did you use? Explain that to the Commission.

A. At one time the sand grains were filled with water, then, then at some later date petroleum accumulated in [fol. 751] the sand stone. In the process of accumulation the accumulated petroleum force the water to exit

from the formation and the removal of the water has never been, is never complete, for the reason that water has a tendency to cling to sand with greater tenacity than the oil, so that in every reservoir actually the space between grains of sand is filled partly by water which clings to the sand and occupies a space between. Now, the amount of water varies, it depends on the fineness of the sand. In the Oklahoma City Wilcox pool only about one-tenth of one per cent remained filled with water,—in the McReynoyld field the space that remained filled with water varies up to 20 per cent. Now, the reason this water which remains in the accumulation of oil is called connate water, "connate" means "native". Now, Mr. Commissioner, in the coring process samples of the same are recovered and it is possible to get a portion of the sand which is in a sort cylindrical shape, which we take to the laboratory and render the sand clean of oil, gas and water and whereby one can measure the capacity of the sand for retaining water. Now, the Phillips Petroleum Company, among others, has conducted experiments over the years to determine the capacity of sand to hold water,—by experimental methods, one calls the capillary pressure technique and one the basis of that the operators arrived at 20 per cent connate water content.

Q. You mean by that that you took a core from a well drilled into the Medrano sand and you extracted all the [fol. 752] oil, gas and water and leaving nothing but pure sand, and then you calculated the amount of material that you extracted from the sand and you separated the water from that and got your percentage,—is that correct?

A. Yes.

Q. What other work did you do besides that reflected by the core analysis?

A. The capillary pressure and the core analysis are two methods to use.

Q. Was the capillary method separate and distinct from the core analysis, was that done in separate laboratories by different men?

A. Yes, under my supervision.

Q. And the 20 percent was arrived at in what manner?

A. That is the average.

Q. Oh, that was the average?

A. Yes.

Q. Now, then, how was the per cent total core volume occupied by gas computed and what actual facts were used in determining that per cent?

A. The amount of pore volume occupied by the gas in a crude oil reservoir can be determined by taking a sample of the liquid from that pool to the laboratory and making an analysis that will reveal the amount of gas contained in the reservoir space.

[fol. 753] Q. Is that obtained by deduction?

A. No, from the reservoir oil.

Q. Oh, the reservoir oil,—will you tell the Commission just how you do that?

A. Well, this is the surface here (indicating on plat) and this (indicating on plat) represents what is five or six thousand feet down in the earth.

Q. A sample of the oil taken at 2000 pounds pressure and 116 degrees Fahrenheit is taken from the reservoir and placed in a sampler,—this sampler has a valve in it which, after the oil is measured the valve is opened and you have a container over here in which you catch the oil. Then you can determine the gas per barrel of liquid and at this instance you measure the gas and not the oil?

A. No, we measure both of them.

Q. Then the percentage shown in line 17 is obtained by actual measurement, the percentage of total pore volume occupied by gas at the time of discovery?

A. Yes.

Q. Then the percentage of total pore volume occupied by oil at the time of discovery as shown in line 18 was determined by actual measurement?

A. That's right,—there wasn't any magic about this.

[fol. 754] Q. You mean you didn't go by the rule of deductive reasoning, in other words.

A. Well, I used the scientific method.

Q. Yes, I understand you didn't find the amount of gas that went out of your cup of oil,—you then deduct from the total cup and you measured,—you then measured the amount of gas that went out and the amount of oil that

was left and the two added together made up 100 per cent.

A. That's correct.

Q. Now then, did you use the permiability in determining the amount of oil which was producible?

A. Permiability, Mr. Bond, was another factor,—it was measured on the cores recovered, the permiability was used in the sense that it came into value consideration for an interpretation of the significance of the factor in evaluating the equities as well as valuing the prospects for substantial increase of ultimate recovery by unitized pressure maintenance operations. Now when you speak of the word "use" whether you mean "consider" whether the permiability was considered, my answer is that it was used in a sense that it was considered.

Q. Well it was considered and used in determining the estimated amount of oil in place under each of these leases?

A. Well, not directly, Mr. Bond.

Q. Was it used directly in ascertaining the estimated recovery of oil?

A. Yes.

[fol. 755] Q. From each of the particular tracts?

A. For example it was used in this manner,—it was on the basis of the permiability characteristic of that sand that one is permitted to estimate that under depletion type of operation as exists today, that ultimate recovery will be about 25 per cent. It was used in a similar sense in estimating under pressure maintenance operations the ultimate recovery would be 35½ per cent, so that permiability is a factor which guides the engineer in estimating the ultimate performance of any given reservoir and it was used in that sense in this instance.

Q. But it was not used as segments?

A. That is correct.

Q. In other words, you used a constant permiability as between segments?

A. Yes, sir, all segments were treated alike in that respect.

Q. Did you use constant permiability as between tracts?

A. Yes, sir.

Q. You also used constant interstitial water as between segments and tracts?

A. Yes, sir.

Q. But you do show a difference of percentage total pore volume occupied by gas between segments?

A. Yes, sir, and that was due to the fact that pressure depletion by those different areas was a substantial difference due to the amount of gas production that occurred in the various areas.

[fol. 756] Q. You used a different percentage total pore volume occupied by oil at the time of oil discovery for different segments?

A. Yes, sir, that was done in order to be fair and equitable to all parties for the reason that the area is segment "B",——

Q. Now, I don't care about the reason at this time, that is a fact, you did that, now then I call your attention to Table "9" Exhibit 71, particularly to line 17, which is Total percentage pore of volume occupied by gas at the time of oil discovery and particularly to the percentage set out in Segments "D" and "E" which appears to be zero in both cases, I will ask you if that means that there was no area occupied by oil or gas in the section "D" and "E"?

A. The answer to that is, yes.

Q. Is it a fact that there is no gas in the oil lying in the oil sand in section or segment "D" and "E"?

A. Mr. Bond, Exhibit 56 introduced by Mr. Montgomery is a map showing the thickness of the Medrano gas sand which details acre feet of original gas bearing sand before any production from the Medrano field.

Q. Of course we are discussing oil bearing sand at this time?

A. Yes, sir.

Q. Table "9" deals with oil bearing sand?

A. I want to be sure and, that you and I are talking about the same thing. Exhibit 57 shows oil bearing sand before any oil production was taken from the Medrano field. The Table "9", the phrase "at the time of oil discovery" means the time not before any production from [fol. 757] Medrano sand, it means times of the first oil production in these areas we were referring to as segments. So at the time oil was first found in segment "D"

and "E", there had been no substantial production from that area because the gas wells production had been either none at all or very small,—so there had been no substantial pressure depletion in the oil zones in segments "D" and "E" due to the production of gas. On the other hand when the oil first discovered in the areas segment "B" there had already been at that time a very substantial production of gas. The production of the gas from the gas-cap caused depletion of the pressure from the oil zone. That was recognized in distribution of equities in this Unit and for this reason that if the oil zone in segment "B" had suffered depletion as a result of withdrawal of gas then that should be recognized that caused this oil to be less recoverable during that time. Properties contributing to oil sand thickness in this particular area should have their property devaluated to the extent necessary to take into the account the depletion of the oil zone as a result of the excessive production of gas and the line which you are now reading to me, being line 17, is an engineering computation which accounts for that depletion in the equity calculation.

Q. I understand and still your testimony however, and the findings of the engineers however, is reflected in Table "9" in line 17, that there is no gas in the oil in the sand in segments "D" and "E".

[fol. 758] A. Well, you use the present tense "is" I will answer this way, if you use the past tense "was" Table "9" says "at the time of oil discovery" segments "D" and "E" there had been sufficient pressure depletion to cause the gas to pop out of solution in the oil bearing zone,—I don't know whether it is permissible to use an example, as an example a model of beer in testimony before the Commission?

Q. Just a minute,—it is your testimony is it not, when you put this bottle down in a well and get it full of oil that whatever gas is in the oil at the time it goes into your bottle, is in solution, that is correct?

A. Yes, sir.

Q. Then you are now telling the Commission there was in sections "D" and "E" at the time of oil discovery was also in solution?

A. That is correct.

Q. You also tell them there was no gas in solution at the time of oil discovery in sections "D" and "E"?

A. No.

Q. You don't tell them that?

A. I tell the Commission that at the time of the first oil discovery in segments "D" and "E", the initial pressure of the reservoir hadn't been substantially reduced, and therefore all of the gas originally in solution in the oil in those two segments still remained in solution.

Q. That wouldn't have any effect on your stock tank oil no matter how much gas was in solution because when [fol. 759] you got it out at atmospheric pressure it all evaporated out of there, isn't that a correct statement, isn't that true?

A. You will have to permit me to answer it in my own way because you have raised a very important point. I am going to draw a rectangle which represents one barrel,——

Mr. Williams: In the interest of time, you are talking about different things, you are talking about gas in solution and he is talking about free gas.

By Mr. Reford Bond, Jr.: What I am asking the Witness about, I am not doing the talking, I don't want to, I want the Witness to do the talking, what the witness is talking about is item 17, table 9 of Exhibit 71 which is labeled "Percentage Pore Volume Occupied By Gas at the Time of Oil Discovery". Now then does that mean the percentage of the volume occupied by the gas in solution in the sand or does it mean the percentage of gas that is left after the gas has been produced out.

A. Mr. Bond, it means none of that, if I may take your time.

Q. Tell me, tell the Commission.

A. Mr. Commissioners, as I see the question which Mr. Bond put to me, it is tied up with this consideration,—it was a part of the equities determination of West Edmond pool as reflected by Exhibit previously introduced, as a large wedge which rises towards the point of the wedge [fol. 760] and the pool is characterized by having in the upper part of that wedge a space that was originally gas. We called that the gas-cap or the free gas. Lying below

that free gas was a section of the rock which I write in the hatched line, lying about the water level which was filled with oil,—this is oil bearing. Now in the equity determination, the object was to count the number of cubic feet of gas which lay in the gas-cap beneath each tract and count the number of barrels of oil which lay in the oil bearing section beneath each tract, and counting the gas at 5c a 1000, the oil at $1.52, in that way joined the two values and distribute equities. The Counsel has been very much concerned about the fairness with which the computations were made. We have in preceding cross examination covered certain aspects of that calculations. We have shown by equation first thing this morning, how the acre feet of coring was encountered, how by that means it was a possible to compute the number of barrels of reserve that lay in the oil bearing section beneath each of these tracts. Now a line 17 in Exhibit 71 which Counsel reads and refers to is a spot which attempted to take into account an exceedingly practical condition,—what that line 17 deals with is this, that before oil was produced in these segments, there had been production from the gas-cap. Now, the testimony in this case establishes the fact that this is one common source of supply and that the production of the gas from the gas wells which we have been speaking about is the production of gas which effects the whole common source of supply, so that for example in [fol. 761] segment "B" the very substantial production of the gas from that gas cap caused a reduction in pressure from 2100 pounds down to about 1200 pounds. That reduction in pressure caused a roaring in pressure in the oil zone, and that production of that large volume of gas caused a reduction of pressure in that common source of supply and caused a reduction in the gas from the oil zone, a depletion of the oil zone and taking away from the recoverable oil of the oil zone. Those properties subject to that depletion as a result of the production of gas would have to be properly weighted into this equity determination and in fairness to all parties was the approval of line 17, table 9, of Exhibit 71. It is possible from the bottom hole sample analysis which I referred to a few minutes ago to compute the amount of gas which would

appear in the oil zone, from the reduction in pressure that I have referred to, so that line 17 says that in segments "D" and "E" there had been no depletion of pressure at the time of oil was discovered and therefore the oil saturation in the oil bearing zone was zero,—there was no free gas down in this oil bearing zone, all the gas was in solution in the oil, but line 17 of the same exhibit says that in segment "B" 24 per cent of the space that was occupied by oil at the time the pool was first discovered, at the time of oil discovery in the area not 80 percent saturated with oil and 20 per cent with water but it was saturated 20 per cent with water and approximately 24 per cent of the gas and the remaining percentage up to 100 was still saturated with oil.

[fol. 762] Q. You now state at line 17 isn't the percent total pore volume occupied by gas at the time of oil discovery to segment "B" or as to section "D" or "E", that isn't true, but that thos- percentages and the difference between them are merely relative matters which are based on the amount of gas that has been produced from the several segments.

A. That's right.

Q. Now then, when you go over into segment "B" which you have designated here as having 23.95 per cent total pore volume occupied by gas at the time of oil discovery, and put your bottle down into an oil well and get it full of oil just as you testified you would do in determining these matters and take it into the laboratory and then you open the pet cock on it and let it produce just like it is coming out of the well, the gas or any other substances that happens to be contained in the container, leaving the oil in the container, I will ask you if it isn't a fact that the gas that comes out and is trapped off into that other container for measurement isn't gas in solution in the oil when it was in the well at the time it went into your bottle, isn't that correct.

A. I suppose that is substantially correct, yes, sir.

Q. You know that is correct, don't you?

A. I will have to answer yes,—I have difficulty in following your questions. I follow your reasoning on the

thing and your explanation of it, I was putting it back to you. Maybe I can answer the question this way.

Q. Let me ask you this,—if you take that bottle again that you are going to recover your oil samples in and [fol. 763] let it down into the well in segment "E" in which segment you show that the percent, total pore volume occupied by gas at the time oil discovery was zero you get your bottle full of oil down in the bottom of the hole, then you turn your pet cock, pull it out and you get your oil out of the hole in this bottle, under the same pressure and conditions that was at the bottom of the hole down in the well, then you take it into your laboratory, you turn the pet cock on top of it and let the gas out just as if you would in producing it out of the well, trap it off into a separate container so that you can measure the gas in one container and measure the oil in the other container which I believe you call a capillary measurement?

A. No, sir.

Q. What measurement is that?

A. That is a measurement of the volume of gas in solution or measurement of reservoir volume.

Q. It is known as a measurement of gas in solution,—I will ask you that the gas that you trapped to measure wasn't a gas in solution, in the oil at the time it was taken into the bottle down in the bottom of the hole?

A. Yes, sir.

Q. Now then, you aren't telling this Commission now are you, that the percentage of pore volume occupied by gas at the time of oil discovery as shown on line 17 as to segment A, B, D, and E is the percentage of gas in solution in the oil in those particular segments are you? You [fol. 764] aren't telling,——

A. No, sir.

Q. Alright then, when you were explaining to the Commission how you arrived at these percentages you began by explaining this method that you have of obtaining the percentage of gas in solution in the oil of dropping the bottle down in the well and taking it to the laboratory with the bottom hold pressure in the bottle and reservoir conditions as assimulated in the bottle and trapping the

gas off and you said you trapped off a certain percentage of gas on the experiment that was made on the oil in segment "A" and that you left a certain precentage of the oil, now, then, I will ask you if the percentage of the oil that was left in that experiment as to segment A was 78.787 as shown on line 18 of table 9, Exhibit 71?

A. No.

Q. That isn't true,—then will you explain to the Commission how it is you used the data that you obtained from this bottle experiment whereby you obtained the percentage of gas in place, in solution I mean in the oil in place.

A. I am going to represent West Cement Medrano reservoir by a wedge which I draw on the board.

By Mr. Williams: Getting back to the point I made awhile ago, I think counsel is asking about solution gas and he is talking about free gas.

A. I will take one more stab at it and try to encompass the area about which you are inquiring and see if we can't get together.

[fol. 765] Mr. Reford Bond, Jr.:

Q. I want you to explain to the Commission what this bottom hole sample or the bottle business whereby you determined the amount of gas in solution in the oil, has to do and how those figures were used in calculating the percentages contained in line 17 and 18, table 9, Exhibit 71.

A. I am very anxious to do that.

Q. Fine.

A. I now represent West Cement Medrano pool by a wedge raising upward towards the wedge end of the figure which is a representation similar to the exhibit that was introduced in this hearing showing the structural depth and point to the fact that at the time of discovery of first production in the Medrano pool the pool was characterized —at the time of first discovery from the field, first production from the field rather, the pool was characterized by having the topmost part of this wedge filled with free gas which is sometimes referred to as the original gascap and below that the sand was filled with oil. Now that refers to one particular time period which we have been discussing and that is the time representing the native condition time of the first production from the pool. Now if the bottom

hole sampler were lowered into the well completed in this oil zone and a sample of that oil were removed to the lab-ratory an analysis of that sample of oil would have revealed this, that with the production of one barrel of oil in the stock tanke there would have been associated with that barrel of oil 427 cubic feet of natural gas that is the [fol. 766] amount that was dissolved in a barrel of oil in the Medrano field under native conditions that prevailed before any production whatever was taken from the pool. Now there is another time period in the history of the Medrano Pool which is important and which we have been considering and which we have been confusing with this time that preceded the production then, and that is the time referred to as time small letter "t" zero, in table 9 that is time of production in these various areas.

Q. It is the time of oil discovery.

A. I think that is where our difficulty is.

Q. Isn't this "T. O" time of oil discovery?

A. In the various areas.

Q. That is what it means in this table, it means in the different segments.

A. Yes, sir, that time varies as between segments, at least seven years difference in the time table you referred to and the one I just now spoke of.

Q. Which segment do you wish to set forth, segment B or C, I want you to explain to the Commission the percentages you obtained from the bottom hole sample method in arriving at these percentages in lines 17 and 18, table 9.

A. I will speak first of segment "B" which had a history somewhat like this. In Segment B the first production from that segment was the production of gas and that production was very substantial in volume. It was so great [fol. 767] that by the time the piece of history in table 9 when oil was first discovered in that segment by the drilling of the Pierson No. 1 well, by the time oil was first discovered, gas production from segment B had been to such extent there was a reduction in pressure from 24 hundred pounds down to about twelve hundred pounds approximately. Now all the evidence in this hearing is to the effect that the Medrano is one common source of supply.

[fol. 768] *A.* (Reporter's Note: This is a continuation of the answer on the previous page). It has no production from the gas cap line but from the entire common source of supply. The gas had been produced to the extent, reduced from 2100-1200 pounds, that is throughout, not only the gas bearing zone but the oil bearing zone. The pressure on the oil is, it remained as reduced gas came out of the solution in that oil, the pressure was reduced, the pressure reduction from 1200 pounds down to, I beg your pardon, a pressure reduction from 2100 pounds down to 1200 pounds, will cause the evalution to be down to approximately the reduction of pressure from 2100 pounds to 1200 pounds will cause the release of the gas to the extent of 150 cubic feet to the barrel because of that reduction, caused a foam to be created in the oil zone by the elevation of 150 cubic feet of oil. The amount of that foamy condition can be estimated from the bottom hole sample analysis.

Q. How did you make that, what method and process did you make that estimate?

A. You put the bottle down there that you talk about and you take that to the lab-rotory and make strip wise and that is between the original pressure and you get a soluble curve.

Q. But can you reconstruct the condition at the original pressure of 2100 pounds?

A. Yes, and you can also detail the history of that sample of oil down to zero pressure pounds.

[fol. 769] Q. That is what you did?

A. Yes sir.

Q. Now then, these percents, as they appear in line 17 and 18 were not used and could not properly be used at all in *cla*culating the estimated oil in place, could they?

A. Yes sir, they could and they were.

Q. In calculating the estimated oil in place?

A. Yes, sir.

Q. What, Mr. Witness, did you know it doesn't make any difference how much gas you produce, it isn't the oil in place unless the oil is produced.

A. I didn't get a chance to finish the explanation, if

you will permit me, I will go forward in the preceding question.

Q. Answer that question.

A. The question? I can't.

Q. You understood super saturation didn't you?

A. Yes, sir.

Q. Isn't it a fact that it doesn't make any difference how much gas you produce from the reservoir, that it doesn't change the oil in place unless the oil happens to be produced with the gas, isn't that correct?

A. The only way that I can answer it is to call your attention to this, it's a primary fact that a layman can understand, two bodies cannot occupy the same space, I ask [fol. 770] your consideration of this fact with the pressure on the oil zone as produced as a free gas production, the gas will have to escape from that oil. The pressure declined from 2100-1200 all was removed the gas then came out of solution, the consequence was that it came out of solution, if gas will have to occupy part of the space where the oil is, the oil will have to be pushed out and that is pushed up there and there is where it is and gas is being produced to the detriment of the oil zone. There is engineering facts on contest and table nine reveals that the situation is such in segment "B". At the time of the first oil production that the oil zone has been depleted to the extent that in segment "B" whereas the twenty percent of the original space occupied by weight and eighty percent by oil that before any production as a consequence of the free gas production, that condition is answered there at the time. We have table nine with this equity was broken, the twenty percent weight remained in segment "B", but the amount of oil produced was 23.9 of the pourous space and as a consequence, there is no oil saturation in place but in fact there is remaining only 56.05 percent. The oil saturation has decreased as a result of gas production, therefore the leases in area "B" must be reduced in valuation out of the recognition of the partial depletion.

Q. Where did that oil go to.

[fol. 771] A. Expelled into the dry gas zone and rendered unrecoverable.

Q. It's in the segment?

A. Yes but you can't get it.
Q. You mean you can't recover that any more?
A. Yes.
Q. And even with the unitization method?
A. Even with prayer you can't.
Q. I am talking about your method.
A. I mean by any way.
Q. Why can't you recover it by gas pressure?
A. Because God created oil and gas in nature and when that occurs it's no longer recoverable.
Q. Can you tell the commission why?
A. That is the very nature of oil and gas.
Q. You mean you haven't discovered the method:
A. I doubt if a method would be discovered except by strip mining.
Q. Now, Mr. Witness, you have a method of determining the amount of oil in place, have you not?
A. Yes, sir.
Q. Not any particular sand area, isn't that correct?
A. Yes, sir.
Q. And you don't have to determine it by an entire common source of supply, do you. Can't you determine it just as to one particular area or must it be determined as to the entire common source of supply?
[fol. 772] A. I could make estimates of the oil in place for the entire common source of supply, or part of the common sources of supply provided that a certain stipulation was made at the time that the estimate has to be made.
Q. Now would it be necessary in order to determine or estimate the amount of oil in place in any particular area within a common source of supply, to first determine the amount of oil in place in the entire common source of supply?
A. No, sir.
Q. It would not be necessary then. Now then, coming back to the oil sand in segment "B", I will ask you to tell the commission what is the result of the bottom hole sample tests on any one oilwell made in that segment and give the name of the well too, please sir.
A. I will have to refer to our files to get the number of

samples taken and in the meantime I will get you the analysis.

Q. Just one sample, just one bottom hole sample of one well in segment "B", just any one but give the commission the name of the well.

A. I will have to get my file.

Q. Just give one of them and give us the name of the well.

A. Give me time. (Indicating on the blackboard and writing.) I write on the board a graph representing among the lower axis, beginning at the left hand side at zero and 200 pounds to 2200 pounds.

Q. Let me interrupt you just a moment. Are you proceeding now to prepare a figure similar to number eleven in [fol. 773] exhibit 71 on the blackboard?

A. Yes, sir.

Q. Well I don't believe that is necessary, all I want you to do is tell the commission the results of a bottom hole sample test on one oil well in segment "B".

A. That is represented in figure eleven that you have referred to in exhibit 71.

Q. It doesn't give the name of any well, just one sample from one well in that section is what I want you to give the commission.

A. The sample obtained by the United States Bureau of Mines on March 17, 1943 from Stephens Pete No. 1 Pierson well.

Q. Wasn't that in segment "C"?

A. Yes, sir.

Q. Let's stay with segment "B", please sir.

A. A sample was taken from Phillips No. one Oaks.

Q. Now, Mr. Witness, wasn't that a gas well?

A. I beg your pardon, that was casing head gas. The difficulty is that we didn't anticipate this there is a number of samples Gulf Bureau of Mines took samples and Phillips took samples.

Q. I think that the commission should have the benefit of it.

A. The commission has had the information for nine years. The Gulf has taken samples from Sherritt No. one which is in segment "A".

[fol. 774] Q. That is in segment "A".

Mr. Williams: Wouldn't it be representative of your point?

Reford Bond, Jr.: No, it would not.

A. All samples taken have had identical quantities, that is the reason that I state that is one well is from one common source of supply, we can examine the files and see if we can trace down the Phillips samples *of* try to find the samples in segment "B".

Chairman Bond: The commission will recess until one-thirty.

[fol. 775] Q. Mr. Kaveler, do you have the bottom hole sample for one well in Segment B?

A. We don't have all the data you requested, but to my personal knowledge bottom hole sample, as well as any other samples we have indicated that the oil at any place in the Medrano field is of such character as is reflected by figure 11 in Exhibit 71.

Q. But you are not able to tell the Commission at this time what the result of the actual test was on any well in segment B?

A. It was as is shown in figure 11.

Q. From which you obtained the data to make figure 11,—and have you told the Commission that you are not able to furnish the actual scientific data that you used in making figure 11?

A. I am telling you the data is shown on figure 11, Exhibit 71.

Q. All right, can you show me the well?

A. I don't have the file on any particular well, but I do have certain analyses from the Phillips-Oaks well.

Q. You compiled figure 11 from certain scientific data, part of which was the bottom hole pressure,—I want the scientific data that you got from the bottom hole test, it being the data from which you made up your charts,—I want you to furnish to this Commission the bottom hole samples of any one well in segment B, so the Commission can tell [fol. 776] whether this is figured correctly?

A. Were I to supply that it would be identical with figure 11, Exhibit 71,—we have the data from the Sherrit well, which is in segment A.

Q. We want one from segment B.

A. We don't have that available.

Q. Will you produce it?

A. I think I can clear up the uncertainties that obsesses you——

Q. Well, wait,—you say you have Exhibit which is composed of certain scientific data,—I want you to produce that data, so that the Commission whether it is correct.

A. May I make a statement.

Q. I will appreciate it if you will tell the Commission when you can have that data here, I think you will eventually have it here.

A. May I make a statement,—Table 9 reflects the facts, Mr. Bond, that the amount of gas in solution in the reservoir——

Q. Now, Mr. Witness, no difference exists between us, but I want the scientific facts and data you used in compiling your Exhibit No. 11.

A. Well, we have it here, the data is in Exhibit 71, if you will be patient enough to let me explain it to you. The amount of gas in solution is the same all over the pool,—the amount of gas is the same in all of the segments to which you refer.

Q. Well, will you produce that scientific tests, of the first [fol. 777] well, or as many as two wells.

A. I have the results of the scientific tests, that's all that can be produced,—if there is something supernatural you will have to produce that.

Q. You say in segment B the percent total pore volume occupied by gas at time of oil discovery is 23.95 and that in segment A it is 1.213?

A. The amount of gas in solution in this oil in the Medrano, source of supply is the same at any point in the common source of supply. At a pressure of 2100 pounds per square inch the amount of gas in solution was about 720 cu. ft. per barrel,—at a pressure of 1000 pounds per square inch the gas in solution is approximately 225 cu. ft. per barrel and so on down to zero pounds per square inch,—that is reflected by Figure 11, in Exhibit 71.

Q. Now, I respectfully call your attention to Table 9 of Exhibit 71, in respect to line 17. Line 17 doesn't refer to

gas in solution but I will ask you if Line 15 does refer to gas in solution?

A. No, because it states clearly, not solution but evolved gas,—that is evolved gas, it isn't produced to the surface.

Q. Was it gas in solution before it was evolved?

A. Yes,—Line 17 has only to do with the reduction in the oil zone which results in the evolution of gas in the oil zone in the reservoir.

Q. Do those figures in Lines 17 and 18 reflect, are they re-
[fol. 778] flected in column 2?

A. No, because they represent a step in advance of column 2.

Q. Are those figures reflected in column 3?

A. Let me inspect column 3 to determine.

Q. Are those figures reflected in any column of Exhibit 53?

A. I will have to correct my statement, Mr. Bond, on column 2.

Q. Do you mean then that the figures in Line 17 and 18 are reflected in column 2?

A. They are all reflected in column 2, yes.

Q. Now, then, will you go to the Blackboard and work out for the Commission the—the figure of the Phillips-Oaks lease, which is tract No. 26, appearing to have an acre-foot volume of 16958 feet, estimated oil in place in thousands of barrels appearing in column 2, the figure being 11,220 barrels, which is 11,220,000 barrels,—now, Mr. Witness, in working that out for the Commission will that change the formula which you placed on the blackboard this morning, column 2?

A. I usually use the same formula.

Q. Will you add or subtract anything?

A. I can't, because——

Q. Well, will you place the formula on the blackboard now, so the Commission can see it again?

[fol. 779] A. I will try to recall the order in which the factors are written down. As I recall the first factor 7758 multiplied by acre feet multiplied by percent porosity expressed as a fraction multiplied by the reservoir volume factor.

Q. Now, is that where the figures in line 17 and 18 come in, in the reservoir volume factor?

A. No, sir.

Q. They don't come in there?

A. No, sir, the other factor being 100 minus percent connate water expressed as a fraction.

Q. Now does that factor contain a consideration of the figures in lines 17 and 18 in Table "9"?

A. Not yet, that is the formula that I wrote on the board this morning that gives you oil initially in place in the tract.

Q. Does that complete the formula that you placed on the board this morning?

A. Yes, sir, the formula on the board, this morning, it is the measure of the oil in place beneath these tracts before any production whatever from the common source of supply.

Q. Is that the formula that is used to ascertain the figure set down in column "2" of figure "4"?

A. No.

Q. All right then, did you not apply additional factors to that formula before you obtained the figure set down in column "2"?

A. Yes, sir.

Q. Then will you please set out for the Commission the additional factors that must be added to the formula to [fol. 780] obtain the results as you have it in Column "2", Exhibit 54?

A. Would it be understandable if I call the product the result from the formula now written, a product which we shall call No. "A", which is oil in place before any production whatever.

Q. Suppose you write that down there then?

A. Then, if the number obtained A and multiplied by a factor which corrects for the depletion of oil by gas production, then that factor would have to be 100 minus the percentage expressed in line 17, 100 minus the percentage in line 17 of Exhibit 71, expressed as a fraction.

Q. Table "9"?

A. Table "9" of Exhibit 71, that would give a number which I shall call the number "B",—that letter "B" is

in fact the measure of the oil originally in place beneath the each tract before any production whatever from the common source of supply and corrected for the depletion of the oil that resulted from the gas production from the free gas-cap, that would be the oil in place at the time oil was first had in the particular segment which we have been referring to in Exhibit 71, Table "9", is the time "t" sub-zero.

Q. Does that complete all the formula in the process which you applied to the figure in column "1" to obtain the figure in column "2"?

A. The figure in column "2" of Exhibit 53 being Table "1" thereof, is the estimated oil in place in thousands of barrels and that would be the figure to be had from the [fol. 781] computation as I have so far described as it.

Q. Then as I understand, you tell the Commission that there would be no other factor that you would need to interpret that formula in order to apply any figure in column "1", Exhibit 53, to obtain the opposite figure in column "2"?

A. I believe that is correct, yes, sir.

Q. Now, will you then please, Mr. Kaveler, take your slide rule or whatever it is necessary for you to use and transform then the oil zone acre feet on the Phillips-Oaks lease to estimated oil in place?

A. The Phillips-Oaks lease being tract No. 26 in the proposed unitized area has 16640 acre-feet that lies within the area designated as segment "B".

Q. Isn't it 16958 feet?

A. No, sir.

Q. I beg your pardon.

A. The Phillips-Oaks lease has 318 acre-feet that lie within the area designated as segment "C". I can point that out on our appropriate Exhibit if you desire it. The total number of acre feet assigned to the tract is 16598, assigned, which is the figure given in total on Exhibit 53, but the total figure must be used in respect to the distribution of the acre feet as between the two areas so that the two computations actually must be made as though applied to the Oaks lease and I will now perform the first one following the formula then the computation involved, multiply

7758 which is the first factor in the formula by the second factor which is acre feet and which is for that portion [fol. 782] lying in segment "B" 16640 acre feet, the porosity of the rock in the area segment "B" is given in line 2, Table 51, as 17 per cent, so the third factor porosity expressed as a fraction is 17 over 100, reservoir volume factor applied to the pressure condition in segment "B" at the time oil was first discovered is given in line 13 as 1.109 and the manner in which I have defined it in my testimony, it will be necessary to place that factor as the fourth factor as 1 over 1.109 the connate water in Exhibit "B" is 20 per cent, the fifth factor in the formula becomes number 80 divided by 100 and so far as I have gone that would be the product which I have first defined and that would give the amount of oil in place beneath the lease had there been any depletion of that lease by gas, by a gas well. Do you desire to make that correction in line 17, Table "9", of Exhibit 71,—you will observe in area "B" 1.213 per cent of the original oil saturated area was at that time occupied by gas.

Q. Isn't it segment "B"?

A. What?

Q. Isn't it segment "B" you are working on?

A. Yes, sir.

Q. I call your attention to the figure in line 17, 23.95?

A. Yes, sir, I would like to make a further correction in the formula I previously wrote, in correcting the oil in place by the use of line 17, Table "9" I originally wrote on the board 100 minus per cent, in line 17, Table "9", Exhibit 71 expressed as a fraction in that respect I was in [fol. 783] error,—I should have said 80 minus per cent in line 17, Table "9", Exhibit 71 expressed as a fraction. I have now corrected that in the formula, now to get back into acknowledge the correction you made, Mr. Bond, to correct the oil in place because of depletion of gas you used 100 minus connate water minus the percentage in line 17, Table "9", of Exhibit 71, therefore the sixth factor in the computation becomes the value 56.05 percent expressed as a fraction, with the understanding that the slide rule is limited to one-tenth percent inaccuracy and remembering that those figures in the table were run by a

calculating machine. When I get through sliding here I may not have the precise number, if you desire precise number to be verified in the Exhibit I will have to get a computing machine.

Q. Go ahead and we will see what the difference is.

A. I don't want the difference to be alleged to be due to the basic method employed,—I want the error to be in the instrument that is used to multiply. I multiplied 7758 by 16640 and get the number 126.3 million, and next multiplied it by 17 per cent and get the number 21.4 million and divided that number by the number 1.109 and get the number 19.32 million and multiplied that by 80 per cent and got the number 15.46 million and multiplied that by 56.05 per cent and got the number 86.5 million, I made a mistake, that is 8.65 million instead of 86.5 million.

Q. Does that conclude your calculations?

A. The Calculation must be repeated for the 318 feet which must lie in segment "C".

[fol. 784] Q. Will you do the 318 feet which must lie in segment "C", will you do that without going through the explanation that you did on the other, that will - a lot of time?

A. I don't, I note I have inadvertently made another mistake in writing down the formula, Mr. Bond, it will appear to represent a substantial change in the formula but it does not. I should have combined item 5 and 6 and written it in this manner, 100 minus the percent connate water content, minus the per cent in line 17 Table "9", Exhibit 71 as expressed in fraction, that would have removed the calculation to that extent.

Q. That will remove your letter "B" calculation then?

A. Yes, sir, and combine it with the "A", so instead of having 80 per cent expressed as a fraction and 56.05 expressed as a fraction in the calculation, both these connate water and the gas saturation would be expressed as 80 minus 56.05.

Q. In the figure 23.95?

A. That you, that is correct, is 80 minus 23.95 expressed as a fraction of 100. So that the amount of oil in place at the time of discovery of oil production in segment "B" under the Oak lease would be for that portion of the sand

lying in the area called segment "B" a volume of 10.8 million instead of 8.65 million which I first obtained,—10.8 million and the amount of oil underlying 318 cubic feet which lie in the area called segment "C" would, after the correction of the formula that I have detailed in a hurry would get 10.8 million, be 275,000 barrels for .3 of a million barrels or a sum total then to be allocated to the Oaks [fol. 785] lease is 11.1 million barrels as revealed by the use of the formula using the slide rule as the multiplying machine. The difference between that figure and the figure revealed in Exhibit 53 is the difference in accuracy due to the use of the mechanical computing machine.

Q. Now, Mr. Witness, in your formule and method which you used in computing the oil in place as appears in column "2", Exhibit 53, you have not taken into the consideration the oil saturation of the sand thickness that is whether the top has a greater saturation than the bottom part has and the difference in oil saturation from top to bottom of the sand thickness, you haven't taken that into consideration, have you?

A. Yes, sir.

Q. You have taken that into consideration?

A. Yes, sir.

Q. Now you haven't taken into consideration the permiability of the Oakes oil sand, have you?

A. Yes, sir.

Q. In computing the estimated oil in place in column "2", of Exhibit 53?

A. Yes, sir, it doesn't particularly,——

Q. I thought you told me awhile ago you took,——

A. Let me change my answer, the answer is "no".

Q. The answer is no?

A. To the question which you inquired about my use of the permiability, I answered "yes". I wish to change the answer to "no".

[fol. 786] Q. You did not include the permiability factor in computing the estimated oil in place as shown in column "2" on Exhibit 53?

A. We do not use it.

Q. But you did use the oil saturation figure?

A. Yes, sir.

Q. Now, in what part of the equation, what factor of the effuation contains the oil saturation figure?

A. The part of the equation now marked factor 5 which is arrived at by substracting from 100 per cent the percent connate water and the percent shown in line 17, table "9" of Exhibit 71.

Q. Which last percentage in line 17 is the oil that is lost to recovery by reason of the production of gas from the gas-cap, is that substantially correct?

A. No.

Q. That isn't correct, I thought you told this Commission the reason you took 23 per cent off in segment "B" was because the gas had been produced out of the gas-cap in permitting the oil to migrate up into the gas sand, thereby to that extent would be irrecoverable, lost to reproduction purposes?

A. That is substantially correct, except line 17 as defined in this table, it says, line 17 "the percent total pore volume occupied by gas at "t" zero". I would say your statement is substantially correct.

Q. As a matter of fact it doesn't represent the percentage of volume in the oil area in segement "B" which is occupied by gas, does it?

[fol. 787] A. Line 17 is the line you inquired about.

Q. Percentage, yes.

A. 23.95 line 17 says "the percent total pore volume occupied by gas at "t" zero".

Q. I am not saying what it says, I am asking you a question?

A. My answer to the question is to read what line 17 states, from exhibit 71.

Q. I think your testimony of that already takes care of it, now you make no difference as between tracts as to oil saturation do you?

A. Not within the area designated as segments, no, sir.

Q. But you do make a distinction as to oil saturation in the different segments?

A. Yes, sir.

Q. Now, then, why did you not make a distinction as to oil saturation as between the different tracts?

A. Because the effect of pressure depletion was uni-

formly distributed over the tracts effected by the pressure depletion.

Q. I will ask you if it isn't a fact that you can determine the oil saturation of a sand by the result obtained from Core Analyses?

A. I should have to make inquiry, Mr. Bond, before I could understand the meaning of the word you used. Did you inquire if from Core Analyses we can determine the degree of saturation of an oil sand as oil exists before production occurred.

Q. No, as it exists at the time the core was taken.

A. The core is taken from a pool in which there has been [fol. 788] no production and the pool is at its original pressure as contrasted to a core taken from a pool that has suffered a decline in pressure due to production before any oil saturation within the oil sand cannot be obtained from the results taken from either or both the Core Analyses.

Q. Isn't it a fact when you make an analysis of a core taken from an oil sand that the laboratory give you the oil saturation of that core for each foot?

A. Yes, sir, and the oil saturation so reported is the percentage of oil remaining in that core at the time it was taken for analysis in the laboratory.

Q. And is that percentage of any value to an Engineer in determining the oil saturation of the sand from which it was taken?

A. No, sir.

Q. No value, now is that a matter upon which Engineers might differ?

A. Well it all depends on the class of Engineers to which you are referring to.

Q. You all go to the same school and learn the same things?

A. Yes, sir, but some are competent and some are less competent.

Q. You consider yourself among the competent class, no doubt?

A. I pray that be the case.

[fol. 789] Mr. Kavaler on the stand.

Witness examined by Reford Bond, Jr.:

Q. Now then, if you can now, Mr. Witness determine the oil saturation of oil sand by analysing the sand under which procedure you term core analysis. What process can or, do you use as an engineer to determine the oil saturation of an oil sand?

A. By the process just demonstrated to you.

Q. In other words, you determine the oil saturation by pressures, is that correct?

A. Porosity, reservoir volumn factor.

Q. Porosity pressures?

A. Connate water, reservoir volumn facotr.

Q. You determine the connate water by the core analysis content?

A. You determine the connate water, will you restate the question?

Q. You determine the connate water content by the core analysis, do you not?

A. No, sir.

Q. How is it that you made that determination?

A. By use of experimental capacity area pressure measurement.

Q. Capacity area Preassure measurement?

A. Which I described this morning, yes, sir.

[fol. 790] Q. What mechanical appliances do you use in capacity area pressure?

A. I can't answer that.

Q. Do you use any?

A. Yes, sir, we use some.

Q. What?

A. The mercury pump and sample of the core, distilled water and salt water.

Q. Sample of the core?

A. Yes.

Q. And you couldn't do anything if you didn't have a sample of the core?

A. Yes.

Q. And don't you analyze the core?

A. Yes.

Q. And that is the core analysis or form thereof?

A. That is a form thereof, yes, sir.

Q. What, in ascertaining the oil saturation of the sand you had now as an analysis of the sand itself, is that correct?

A. I can't answer the question because I don't know the understanding you contribute to the words.

Q. Well, do you have to use data obtained from the oil sand itself in order to ascertain the oil saturation in the sand?

[fol. 791] A. Well of course, Mr. Bond, oil saturation is experienced is percent of poor volume oil sand, is 100 percent or less sand 100 percent.

Q. That is true and in determining that percent you have to have the sand and examine it and analyze it before you can make that determination?

A. No, sir.

Q. And you say that you can determine the oil saturation without any of the sand?

A. So far as I understood your use of the word.

Q. Now, Mr. Witness, I will ask you if it would not be possible to determine the oil saturation of the sand by examination of a complete core of the sand and if data derived from core analysis showing the oil saturation of the sand, the permeability, the porosity and the water content, now you can or you can't.

A. Well, you can or you can't, but you have to have an intelligent question put to you before you can answer it:

Q. I am sure that you can comprehend.

A. You inquire as to saturation of an oil sand.

Q. You can determine the oil saturation, or you can't from those figures, I want to know if you can or you can't.

A. The point of my confusion, I never know whether you are talking about the sand in the reservoir or the piece recovered, there is a substantial difference.

Q. We will have to say, as it existed when a piece of core [fol. 792] is recovered and from that you can make your engineering analysis forward and backward from the start?

A. You will have to give me the liberty to give you a little education.

Q. I will be glad to have - educate the record.

A. I draw two parallel lines (Witness goes to blackboard

and draws on board while testifying) to represent, we have the Medrano Field and the sand zone, as the permeability is as such evidence indicates before there is any disturbance of the contents of the reservoir, but when drilled the reservoir space is occupied by eighty percent by petroleum and twenty percent by connate water, the connate water by analysis and character of the sand and obtaining from core analysis I can tell by certainty of the native state, eighty percent oil and twenty percent water in the oil zone, if the inquiry is limited to that, I can give the answer, if you ask me about what saturation varies to the core. I will call this to your attention, drilling involves circumstances of drilling through the amulous, any core cut contain the characteristics of the lake and the drilling made, that the core does not represent the material condition of the lake in the reservoir because of the flushing of the drilling made and the core analysis that you ever show any oil and water saturation which is substantially different than the lake insutter.

[fol. 793] Q. You do not throw aside and out the window the core analysis?

A. No.

Q. And it's used by the best operating companies?

A. Yes.

Q. And it's used to determine at what point the sand is the most resistant and that is to say possibly the permeability is the highest and the oil saturation is the highest and the porosity is the highest percent?

A. As well as the lowest, Yes.

Q. I will ask you if it isn't a fact in particular operation, the casing was shot at points indicated in the core analysis where the sand has the highest permeability, the greatest oil saturation and the greatest porosity bearing factors that will *the* indicate the best production of oil, is that correct?

A. No, sir.

Q. You mean that they didn't shoot the casing where it is liable to produce oil where it's more likely to produce?

A. Not always.

Q. Isn't that the attempt by all producers?

A. Not always.

Q. If the producers desire to produce oil, he will shoot that section that contained oil?

A. You mean perforated casings?

[fol. 794] Q. Yes.

A. If the producer desires to develope the highest potential, then it-s where the highest permeability is.

Q. Then there are zones of high permeability and low permeability?

A. Zones in sand, zones in the salt and in the pool.

Q. And it which varies of oil saturation?

A. It would check, you refferred before to after production.

Q. I mean at all times.

A. Before production was had, we were uniformly saturated in the common source of supply.

Q. Isn't it a fact that the top and bottom of the sand oft-times has an oil saturation and vice versa, before production?

A. I don't know what you mean by lower or bottom.

Q. Can you measure oil saturation?

A. I can't answer that question because I don't know to what you refer.

Q. Is oil saturation measured on core analysis report.

A. It's measured and cored on the report.

Q. What is the unit of measure?

A. Percent of void space.

Q. Percent of void space occupied by oil, is that correct?

A. If you desire to measure oil saturation, yes, sir.

Q. Isn't it true that the percent of the void space occupied by oil is greater in the middle of the sand and *and* less in [fol. 795] the top or the bottom of the sand or vice versa in different pools and in different wells, isn't that true?

A. I don't know what you mean by top or bottom, I will volunteer some assistance and we will get together——

Q. You draw a picture of the cross section of the sand and we will see you mark the——

A. You may refer in the narrow and limited zones for the gas oil content, there may be a variance and you may refer, that the water oil content, there is a narrow and insignificant zone of transition of oil and water.

Q. You are not going to tell the commission——

A. I have already done so.

Q. You are not going to tell this commission that 150 feet that the 192 feet, Mr. Witness, of oil sand found in the Phillips Oaks Well No. 3 contains the same oil saturation from top to bottom, will you?

A. For all practical reasons, yes, sir.

Q. For all practical reasons, what do you mean by that?

A. Mr. Bond, do you refer to the 192 feet of the section in the oil bearing Medrano sources of supply in the Oaks well?

Q. I refer to the 192 feet that you have listed on your exhibit 157, which is an Isopac map of the West Medrano Field.

A. Oaks what number?

Q. Phillips Oaks Number three.

A. You asked me if the oil saturation of that section was the same?

Q. Yes.

A. Throughout.

[fol. 796] Q. It isn't it?

A. I will answer your question, if you will permit me answering as before, any production as had in the area of that well, it was uniformly saturated.

Q. How long?

A. 192 feet.

Q. How long before the first production?

A. Some indefinite time preceding the first oil production.

Q. Would you say as little as a year?

A. As little as a year, and as much as ten million years.

Q. Would you go from one-ten million you are just guessing?

A. You guessed one year and I guessed ten million.

Q. After that well was drilled, Now, Mr. Witness, that casing was not perforated from the top to the bottom of that sand?

A. I will have to look at the records.

Q. Alright look and see if you have to have it (the witness examines his records). Well now, Mr. Witness, you say you are having trouble finding out how the casing as tabled on Oaks No. 2.

A. I am not having any trouble. The casing in the Phillips Oaks Number three was set at the top of the sand, there was no opportunity to perforate into the sand for that reason.

Q. You are not going to tell the commission that after the Oaks well was brought in that there wasn't some difference in the oil saturation of that sand from top to bottom of the 192 feet?

[fol. 797] A. I don't know how I can reply, the use of double negative confuses me, but the bore production from the Oak number three, was it uniform from top to bottom?

Q. After day of production, wasn't there a variance of the sand oil from the top to bottom?

A. Yes.

Q. Are you sure?

A. Not particularly sure.

Q. You haven't checked it?

A. I didn't have the opportunity.

Q. Can determine from the data you have?

A. There is no way of determining it.

Q. You have core analysis on that well, I believe.

A. Yes, sir.

Q. Will you kindly refer to the core analysis and advise the commission?

Mr. Williams: The core analysis was taken before the well was produced. How could he show it, showing the condition afterward?

Reford Bond, Jr.: We are willing to offer it to the commission for what it is worth.

Mr. Williams: The core was taken before the will was produced and couldn't possibly tell what it was after it was produced.

Reford Bond, Jr.: This witness is stalling around before this commission to let the commission to believe that the [fol. 798] Oaks 192 feet has as much oil in the top as in the bottom.

Mr. Williams: The commission please, he has made his statement, if he wants expert witnesses, he can get them. This witness has given the answer and that is his testimony. There is no use in arguing about it.

Reford Bond, Jr.: I think that the core analysis will impeach testimony and I want to offer it for that purpose.

Reford Bond, Jr., continues with the Witness:

Q. Does the core analysis on the Phillips Oaks No. 3 show the oil saturation for the first five feet?

A. Oil saturation of the first five feet of what?

Q. Sand.

A. As the sand existed in the earth?

Q. No.

A. You are speaking of the oil saturation of the core?

Q. In the core as analyzed.

A. As found in the core?

Q. As analyzed by the laboratory.

A. Yes, sir.

Q. And how much does it show?

A. The top of the sand was 5783 in this particular well, Mr. Bond.

Q. Very well.

A. And there was 5975.

Q. Very well, will you mark those figures on the blackboard?

[fol. 799] A. I am now writing them on the blackboard.

Q. Will you indicate the oil saturation for the first five feet of sand as shown by the core analysis?

A. The percent oil saturation at depth of 5795 is 25.6%.

Q. And what is the permeability for that?

A. 13.4 is the permeability.

Q. And what is the water content?

A. 50.7, if I read it correctly.

Q. Is that percentage?

A. Yes, sir.

Q. Now what is the next five feet in the area on which you have there?

A. five feet further down or how do you want it?

Q. Does the report indicate on every a test of by feet or what?

A. Yes, it does.

Q. of feet?

A. Yes, sir.

Q. Let's skip down five feet?

Q. Now what is the next depth at which you have a Core Analysis?

A. 5881.

Q. Will you write on the blackboard the percentage of oil saturation in millidarcies and the percentage of water content as shown by the core analysis at that depth?

A. At 5881 the percentage oil saturation is 22 and the permiability is 103 and the percent water is 38.3.

Q. Now will you refer to the point on your core analysis [fol. 804] about ten feet below 5881 feet and state the,——

A. At 5881 approximately the percent oil saturation is 25.2, the permiability is 191, and the percent water 45.6.

Q. Will you give us those same figures at a point approximately 5900 feet?

A. At 5895 the percent oil saturation is 13.9. The permiability is 52.6, and the percent water saturation 42.7.

Q. Now, will you continue with that explanation of the core analysi-, picking out a representative, a fair representative figure showing the percent oil saturation millidarcies of permiability and the water percentage content on down to the bottom of your core, bottom of your hole on.

A. Do you desire these on the board?

Q. No, No not particularly.

A. I will erase the upper part of the diagram, or the numbers,—at 5936 oil 26.9, permiability 174, percent water 39.1. At 5945 oil saturation is 17.6, permiability is 24.2, water saturation 43.9,—at the 5962 water saturation 43.9, at the 5967 oil saturation is 15.4, permiability 14.5 water saturation 53.6 and the base of the sand is 59.75 which is the nearest core analysis I have to that.

Q. I believe you testified that the casing in this well was set on top of the sand?

A. Yes, sir.

Q. Do you have an electric log on this well available?

A. I have the electric log of the Phillips-Oaks No. 3. [fol. 805] Q. Now I will ask you to examine the log and state to the Commission whether or not the showing of the electric log as to oil saturation, that has the absence of water and the presence of oil or lime?

A. With respect to those two questions, those are geological questions, left to the province of the geologists. I

am no expert in geology. If you desire an answer, I will give you an answer as a layman interprets a log.

Q. I understood you to testify as to the geological report as construed by the geologists and the methods they used.

A. I did so far as my lay knowledge of geology permits me.

Q. You don't know how to interpret an electric log?

A. Only generally,—if you want me to answer I will, I am qualifying as an expert.

Q. In other words, you tell the Commission that your interpretation of an electric log wouldn't be as good or as correct as a regular engineer or a geologists?

A. As a qualified expert in the interpretation of electric logs, my testimony would not be as good as his.

Q. Now if the Commission please, I wish to recall the attention of the Commission to the testimony of Mr. Montgomery which he said these matters as to the possible productivity of the oil sand was a matter that was left to the engineers. Now Mr. Williams do you expect to have an engineer on the stand who will be able to interpret these logs besides Mr. Kaveler?

By Mr. Williams: I didn't understand that that was your [fol. 806] last question. You asked about the character of the sand and you said you were not qualified to answer.

By Mr. Reford Bond, Jr.: I asked for the interpretation of the electric log, I want to have the interpretation of the electric log because that is the data and information upon which the division of the oil and gas among the persons entitled hereto is made under the Plan.

By Mr. Williams: I understood your question to be the quality of the sand which is a geological question and interpretation.

By Mr. Reford Bond, Jr.: My question went to what the electric logs indicate, if they interpret certain scientific,—

By Mr. Williams: He can interpret that for you.

By Commissioner Weems: The Commission believes he can.

A. The electric log of the Oaks No. 3 which I have, shows the traverse of the bore hole from a step 410 feet to a total depth of approximately 5991, and from that the

top of sand has been picked by the geological committee as 5785. I do not notice the notation on here as to the base of the sand, I believe the base of the sand in this well was 5975 as picked by the geological committee. The electric log, Mr. Commissioners, is a means to identify certain strata in the bore hole, among the strata identified in the [fol. 807] electric log is the Medrano sand near the base of the log. The electric log has its principal usefulness as a means of correlating the various strata of beds that lie inside of the bore hole. The electric log does not define the quality or the productivity of an oil sand. The electric log simply identified the particular sand bodies in the geologic column.

Q. I call your attention to the curves on the right hand side of the electric log that you have, asking you to tell the Commission what those two curves indicate with reference to water content, oil content, or lime composition of the strata opposite?

A. The electric log Mr. Commissioners, is composed generally of two sets of curves. The curve which reflects on the lefthand side curve is called the potential, self-potential curve and that is obtained by a procedure whereby an ordinary volt meter is held in the earth, one part of the volt meter being in the drilling mud fluid and the other part of the volt meter being in contact with the earth.

[fol. 808] Answer of Witness continued from previous take:

A. And the voltage was measured in that manner and was shown as a self potential curve on the left hand side of the curve of the loft. On the right hand side of the loft there always one and sometimes more curves. The curves reflect the resistivity of the earth. Those curves are made in the manner of measuring these resistivities of an electric conductor. During the logging tests current was passed from the bore hole to the earth and the resistance was measured during that flow and expressed in the proper electric units, It being the units of ohms riesi-tance and the potential part was the electrodes, However during the course of the measurement. As a general expression the porous beds was shown by a so called "kicks" on self potential curve as see- on Oaks number three. The "kick"

represents a porous body and generally speaking a high resistivity indicates the presence of oil or gas or petroleum substance for the reason that petroleum is a non-conductor. Oil is like gas, it is a non-conductor, it is like insulation on an electric wire in that respect. That (indicating) high resistivity, a high electric resistivity is shown by a "kick" to the right of the *of the* curves on the right hand side of the log. Water has a low resistivity, particularly salt water so that when sand zone is encountered bearing salt water, it will have low resistivity. Like the right hand side of the curve here (indicating) it is almost zero below the line [fol. 809] on resistivity, so that the geological committee in picking the sand thickness used the log as a guide and the Oaks No. 3 log was so used.

Q. I will ask you if it isn't a fact that limestone is also non-conductive and the resistance of the right hand side of the curve——

A. In sandstone, yes, sir, rock is non-conducting itself.

Q. Isn't it generally considered by geologists and engineers reading these electric logs that when you get a line on the right, that that curve indicates limestone or oil?

A. The indication on reading the electric logs is an art in itself. The interpretation is that the answer is yes and no.

Q. Now let's confine the question to the Medrano sand that we all know about, that having been drilled and cored and produced and I will ask you if when the line kicks out to the right in the Medrano, if it doesn't indicate the presence of oil?

A. Substantially, yes.

Q. Isn't it true that the Medrano sand is in a limestone sand?

A. Yes.

Q. And a very little limestone in the sand?

A. Yes.

Q. Now then, Mr. Witness, will you compare the electric [fol. 810] log and the indications of the oil contact of the sand at the various depths with the results obtained from the core analysis?

A. That is an engineering basis for such a computation, Mr. Bond.

Q. Well, I will ask you if it isn't a fact that with your curve on the right kicks far to the right that indicate a further oil saturation and the further it kicks the more oil saturation?

A. No, sir.

Q. I will ask you if it doesn't appear to be that way when you appear to compare the electric log with the core analysis report?

A. Well, it may be, those off wells does.

Q. Doesn't it in this particular well?

A. On Oaks No. 3, the dotted curve on the enlargement of the second log, it being an enlargement of Oaks No. 3, the resistivity kicks far to the right.

Q. And indicates heavy saturation of oil sand?

A. No.

Q. Do you know that there is a heavy oil saturation at that point?

A. I wish to call your attention that there is no correlation and no quantivity measure of the oil saturation from the shape of this electric log curve.

[fol. 811] Q. Now you have a segment from 5810 to 5880 from which a core was recovered and I will ask you to look at the electric log at that point and state to the commission whether or not your line kicks clear out.

A. Yes, sir, it does.

Q. Showing that the sand presently shows probable oil at that depth?

A. Yes, sir.

Q. You say the curve on the left indicates porosity and permeability?

A. No, sir.

Q. What does it indicate?

A. Self-potential of the earth.

Q. What do you mean by self-potential of the earth, explain to the commission.

A. May I erase the board?

Q. Yes, go ahead and erase it off.

A. Mr. Commissioner, in the course of drilling a well a measurement is made of the electric potential or the voltage that exists between the well bore and the earth and that electric potential depends on the kind of drilling mud used

and the amount of water in the porous space of the earth and that voltage in the electric log survey is the self-potential curve of the electric log.

Q. What does that indicate to you as a petroleum geologist engineer?

[fol. 812] A. The self-potential measures the difference of ions unit volume in the earth and number of ions per unit volume in the drilling mud.

Q. Does that give you any indication as to the porosity that the oil sand opposite that point on the log would have?

A. It indicates the presence of porosity but does not measure it quantitatively, that I assume——

Q. Does it indicate the presence of high permeability?

A. No, sir.

Q. Does it indicate anything with reference to permeability?

A. No, sir.

Q. Now, I will ask you, Mr. Witness, to refer again to the core analysis report, which I am going to ask the reporter to mark as exhibit 75 and I will — you to state whether or not it will be possible to obtain a weighted average of the oil saturation of the sand which has been analyzed in the core analysis.

A. It is possible to take a weighted of the oil saturation in the cores but that does not reflect the oil saturation in the reservoir.

Q. I will ask you if it will be possible to take a weighted average of the water?

A. It will be possible to take the weighted average of the water saturation, but that will not reflect in the sand body.

Q. I will ask you if it will be possible to take the weighted [fol. 813] average of the permeability in millidarcies.

A. It will be possible to take the weighted average in millidarcies.

Q. Now then, I will ask you if it isn't a fact that it appears from the examination of the core analysis, which has been marked exhibit 75 and the electric log marked exhibit 76, to determine that the oil saturation, the water content and the permeability of the Medrano sand at the point of which the Oaks No. 3 well was drilled through

the sand varies from the top of the sand to the bottom of the sand?

A. I can answer your question only with a little bit more definite instruction as to what you refer to in your question. If you ask the question to inquire if the core analysis and the electric log can be correlated so as to make it possible to determine the water and oil saturation in the Medrano sand reservoir itself from the electric log from the oil saturation in the core, my answer must be it cannot be done. If you ask in respect to the water content, if the average of the core water content refracts connate water content in itself, my answer is it does not. In other words, if one took the average of the water saturation from the Oaks No. 3 core analysis, there would not be the connate water content of the Medrano sand. It is possible, however, to take the weighted average of the permeability reflected by the core analysis. The permeability of the cores reflected, the permeability of the Medrano Sand at the [fol. 814] point of coring, the permeability property is not destroyed in the coring proposition. The permeability of the sand and the connate water content and the oil saturation are not reflected by the electric log in a quantitative or mere quantitative sense, but the core oil saturation and the core water saturation do not directly reflect the oil and other saturation of the reservoir by the electric log in a manner in which the electric log only indicates generally the presence of porous rock and gives some general indication as to whether or not it has oil or gas bearing in the interval indicated to the point.

Q. I will ask you if it isn't a fact that the data that you may obtain from exhibit 75 and exhibit 76 and if your general knowledge of the completion of the Oaks No. 3 well, that the oil saturation and the permeability and the water content will have some of the Medrano sand variety from the top of the sand to the bottom of the sand?

A. As I understand the question of counsel, he is asking whether or not the results of a core analysis directly and quantitatively reflects the condition of the sand.

Q. No, that is not my question, Mr. Witness, please.

A. Now, I am groping.

Q. Now, if I can keep you from groping, I will ask it again. No, I am asking you to tell the commission as to whether or not these same items which you use in determining whether or not the oil sand will produce oil, that is oil saturation, permeability in millidarcies and percent [fol. 815] of water content, whether these same items indicated on the core analysis and electric log I won't say definitely, quantitatively, I want to know its indication that they vary from the top of the sand to the bottom of the sand, I think that is pretty clear.

A. The oil saturation and the water saturation of the cores vary, as the counsel suggested in the question. During the course of the drilling of the Oaks well, there was a sand that was drilled in the thickness by the geologist committee as the productive thickness. These samples were cut out and taken to the laboratory to determine as to whether any water, whatever was in the lake and the core analysis reflects that which counsel had me write on the board, one thing in the core analysis, the core aster it arrived at the lab-rotory had 260 percent and that varied .9 percent and that varied over this distance. (indicating). In answering to counsel's question, the only answer is the oil saturation varied in the cores taken. That variation is not to be interpreted as a live variation or oil saturation in the Medrano sand, as it existed in the earth and the reason is that during the course of the drilling the rock cut was as to the circularly mud and other things happens to the core which destroys some of the oil and water core as it existed in the sand, so one can gather from the core analysis one thing that the Medrano sand was productive over the 192 feet assigned by the geological committee. It was productive of oil and one can, with additional informa- [fol. 816] tion, obtain from the core analysis the permeability operation that is not destroyed because there is a characteristic of the solid rock itself and it is concluded that 192 feet is productive of the sand. If I haven't misunderstood one of the points, that constitutes the answer.

Q. Very well, is it your testimony then that the 190 feet of oil sand in Phillips Oaks No. 3 is uniformly saturated with oil at the time that the well was drilled and contained as much oil in one [illegible] in the oil sand that was

perpendicularly as any other lease, is that your testimony?

A. The oil sand was the same throughout before any production was had in the common source of supply. After the production was had in the common source of supply was because of some production and before that was disturbed and that was uniform throughout.

Q. I take it by that, that you are telling the commission that immediately prior to the time that the first well was drilled in the Medrano pool, that 192 feet of oil sand of Phillips Oaks No. 3 well, it was at that point at that time the well, not having not been drilled, was uniformly and equally saturated with oil from top to bottom?

A. The answer is yes, if I have properly understood you, if you and I are both talking about the interval or talking about being what the geological committee did. the [fol. 817] answer is yes, it is uniform throughout there.

Q. The geological committee didn't pick or designate any interval as being productive and you know it.

A. They picked the interval from the top of the sand to the base of the sand and that is the interval that I talk about at 192 feet.

Q. Isn't it a fact that the geological committee determined the thickness of the sand and did not determine what part would produce and wasn't that Mr. Montgomery's testimony and you sat here and listened to it, that is correct?

A. That is correct.

Q. Then you are predicating your answer on something that didn't happen, now tell the commission whether or not at the time preceding the drilling of the first well in the Medrano Pool, if your testimony is that that area of the pool which lies and which is directly under which the Phillips No. 3 Oaks well is now saturated with oil from top to bottom equally and in equal amount of every foot, is that your testimony to this commission?

A. As I understand the question of counsel, he is inquiring about the saturation of the oil that existed in the Medrano oil sand before any production was had in the pool.

Q. I said immediately prior to the time that the first well drilled in the pool.

A. Thirty seconds of any production.

Q. Alright.

A. Mr. Montgomery testified that the Geological Committee picked top and the base of the productive sand [fol. 818] interval, I have testified that the engineering committee was determined with fractions of that as productive. The Engineering Committee, as well, have the core analysis there and from the study of the characteristics of the pool, it is the conclusion of the engineering committee that well there as shown by the geological committee was in the productive sand and my answer is that prior to any production of the Medrano, common source of supply, that thickness of the Medrano sand picked as being the gas-oil water content is uniformly saturated in that original oil saturated interval in the Oaks No. 3 and in the other part of the original oil bearing area.

Q. Now you say on the average what do you mean by on the average, do you mean that that is enough heavy saturation in the middle to make up for the light saturation on the ends.

A. Now, I mean that the sand is uniformly saturated with oil.

Q. There is as much saturation at one point as the other?

A. Yes.

Q. Now you mean to testify and tell this commission that the oil saturation of the sand at 5783, at this time, we are talking about before the first well was drilled in the [fol. 819] Medrano Pool, is the same as 5800, 5891 and 5945 and 5667, is that what you are telling this commission?

Mr. Williams: I think that we should clear up what they mean by saturation, are you talking about volume of oil in porosity or percent of saturation in the void space, he is talking about it as engineers know it, I think he is talking about volume of oil in barrels not feet of segment.

Reford Bond, Jr.: If the commission please, this witness has testified about percent of saturation, core analysis report and prior to that time, percent of saturation. As It appears in the core analysis report, as explained to the commission and to the record as being that percent of the

void space which contained oil. I don't believe that there is any question but what the witness understood the questions that he is testifying about.

Chairman Bond: If there is any misunderstanding about the volume and saturation, it can be cleared up on cross-examination.

Mr. Williams: This is cross-examination.

Chairman Bond: On re-direct examination then.

Mr. Williams: It has been answered by the witness seven times. In his opinion the saturation is uniform from top to bottom, if that is not correct, they can refute it by making their case.

Chairman Bond: If that course and line of questioning is continuously asked, the commission will hold that it's [fol. 820] repetition.

Reford Bond, Jr.: If the commission please, he has not answered, he has put something in. Now I want him to tell the commission if the percent of oil saturation at this particular footage points, at the time I stipulated the answer was exactly the same.

A. (Witness) The answer is yes.

Mr. Reford Bond, Jr., continues with the Witness:

Q. Now Mr. Witness, do you say the same thing as to water content?

A. Yes, sir.

Q. And do you say the same thing as to permeability measured in millidarcies?

A. As I explained before, Mr. Commissioner, the permeability of the rock is not destroyed in the core operation and it is reflected in the core and the permeability in the core analysis is a quantitatively measure of the permeability of the rock and the answer is no.

Q. You then, dividing the oil and gas in the reservoir between the persons entitled thereto do not take the permeability factor in consideration or is it in your formula? [fol. 821] A. It was not taken into consideration, no, it was not directly taken into the formula——

Q. Well, can you point out on Exhibit 53 the Table where the formula, where the permiability factor appears?

A. On Exhibit 53, Table 2, Page 1.

Q. Will you indicate on that Table what part of the Table deals with permiability?

A. The tract No. is the first column, the second column is the Company and lease name, the third column is the per cent of total value of recoverable oil and gas and the fourth column shows the percent of total current income. In the equity formula consideration was given to the current income, 20 per cent of the weight, so in answer to Counsel's question, permiability is directly taken into account by the 20 percent income factor.

Q. Will you detail to the Commission how the percentage of total income factor was obtained, and I think, for example, if you will work out for the Commission the Phillips-Oaks No. 3, which is tract No. 26,—how was that obtained?

A. The answer to that question begins with Exhibit 53,—the note at the base of Table 3 indicates the following and I read, "Income average for May, June, and July, from Corporation Commission figures."

Q. Where is that you are reading, from Corporation Commission figures,—yes, I see,—go ahead?

A. (Reading) "Income average for May, June, and July, from Corporation Commission figures for pro-rated oil wells. For pro-rated oil wells the allowable was used. [fol. 822] For unpro-rated oil wells actual runs were used. For gas wells it was assumed that full allowable for three months was sold for 5c per MCF. The reason the word, "assume", is in there was that June, July, and August they did not take the actual—it was assumed they ran their daily allowable, so, computed on that basis.

Q. Will you state to the Commission why the word, "allowable", was used, rather than potential?

A. Because potential doesn't measure the oil in place.

Q. I will ask you if it wasn't because you couldn't produce that oil on potentials and you couldn't recover that oil on potential and you had produced that oil——

A. One could recover only the pro-rated allowable. Now, the word, "unpro-rated", in Tables 3, should not have been used and there should be substituted 4, the, as follows, "wells unable to make their allowable",—I would suggest that.

Q. You would suggest that language be substituted, "wells unable to make their allowable", instead of unprorated wells,—in other words you will say that there are two classes of wells in the Medrano pool, wells that are capable of making their allowable and those not capable of making their allowable. I will ask you why, and ask you to explain to the Commission, why you use the daily allowables, as fixed by the Commission, in cases where the wells would make their daily allowables, where you use the figures on the wells not able to make their daily allow-[fol. 823] ables instead of using the permiability figures that you knew by reason of your examination of core lists?

A. The reason, because they are not susceptible to that sort of reduction, therefore you use the actual production figures in lieu of——

Q. You use the actual production figures in lieu of our scientific permiability figures, as stated in millidarcies,—is that right?

A. Yes.

Q. Then you do vary the permiability or the ability of the sand to produce oil of the various tracts, by taking into consideration the amount of oil that was actually produced?

A. Well, we don't vary anything about the equity.

Q. Well, the figures vary?

A. Well the equity is 20 percent of the amount of oil a well is capable of producing.

Q. Now, then, you only allowed this permiability factor, however based on the actual production of wells, to apply to only 20 percent of the producable oil?

A. Well, that is not entirely correct,—it is correct up to the point of your question,—the Medrano sand shows the sand being a reasonably uniform so it was considered as between all the tracts.

Q. So, now you say the permiable factor is one that did not vary in any way——

A. No, I didn't say that the permiability factor, I say the [fol. 824] variation in permiability as between tracts was zero.

Q. Then the fact that one tract produces more oil than another is because one tract may receive a greater percentage of the producable oil than some other tract?

A. Yes, those tracts which are capable of making daily allowable as set by the Commission, receive higher than the tracts that do not.

Q. And you consider that the permiability varies from tract to tract, do you not?

A. I think that the variation is insignificant.

Q. Well, a tract, a well, that would make 200 barrels would get a greater percent in the Medrano pool than one making only 10 barrels?

A. Everything else being equal, yes,—that question couldn't be answered yes or no*t*.

Q. I understand that, under this Plan you have devised any well making 200 barrels a day is going to get its tract a greater percentage than a well making only 10 barrels?

A. Yes, all other things being equal.

Q. And right there, that is because you consider the permiability of the sand under the tract that has the 200 barrel well greater than the permiability of the sand under the well, under the tract that has the 10 barrel well.

A. All other things being equal.

Q. Well, if all other things were not equal the ratio still would be 200 to 10?

[fol. 825] A. Well, the well making 200 barrels would get a larger credit than would the well making 10 barrels per day, all other things being equal.

Q. Regardless of all other things being equal, the well making 200 would get more consideration than the well that made 10?

A. Yes, if you are to confine it to that particular factor, yes.

Q. Well, that particular factor takes care of the permiability of the sand under the tract?

A. Well, I don't know what you mean.

Q. Now, then, you have a percentage table of current income in Table 2 Column 4 of Exhibit 53,—that is designed to take into consideration the permiability factor?

A. In a general way.

Q. Now, does that take into consideration any other factor?

A. It takes into consideration the working interest in that lease.

Q. Does it have any bearing on the amount of oil and gas——

A. As placed in the equity formula.

Q. In your opinion?

A. Yes, all this is my opinion.

Q. And you are offering that as a basis for Unitization of this field?

A. I am vigorously offering it.

Q. Do you think the permiability factor is entitled to only 20 per cent consideration?

[fol. 826] A. Well——

Q. Why don't you give it the full 100 per cent?

A. Because it wouldn't be fair and equitable to all parties.

Q. Why?

A. Because it wouldn't measure the equities that they own in the common source of supply,—because some would get too much and some too little.

Q. Then, this is exactly the correct amount?

A. Well, in the sense that one has to be exactly correct, there seems to be some difference,—Counsel has asked me to be exact,—I am sure that the Commission understands that I appear before you, Mr. Commissioners as an Engineer advancing Engineering doctrines and trying to carry this doctrine so far as possible mathematically and you know that such matters cannot be proven with mathematic exactness,—no one would be expected to prove——

[fol. 827] By Mr. Reford Bond, Jr.:

Q. Now Mr. Witness, who said the 20 per cent, who discussed that?

A. The conference of Operators, hearing of opinions, hearing pro and con. Hearings had for the fairness and unfairness of this formula, for that formula, finally reduced itself to the unanimous agreement among the Applicants that at 20 per cent to current income and 80 per cent to oil was as fair and equitable as humanely possible to arrive at.

Q. Then that figure was set by the Operators Committee?

A. Well, in the sense that the Operators Committee re-

flected the working interest ownership in this pool, yes, sir.

Q. Did you recommend that figure to the Operators Committee or did they recommend it to you?

A. I joined with the group in deciding that was a fair and equitable plan of equity distribution.

Q. What facts did the geological committee have in arriving at that percentage?

A. Mr. Montgomery testified to the part that the geological Committee played in determining the sand thickness and other geological features, to that extent they contributed to the conclusion.

Q. Did they assist in anyway in arriving,—did they fix the percentage of 20 percent or any other percent or make any recommendation as to the percentage?

A. I don't believe they did.

Q. Did the Engineering Committee make any recom-[fol. 828] mendations as to the amount of the percentage?

A. They may have approved the course of deliberations.

Q. What was the recommendations?

A. I don't recall right now.

Q. But in the final analysis on percentage, the percentage fixed by the Operators Committee?

A. That is true, yes, sir.

Q. It was composed of a representative from each company?

A. Except Mr. Tom Palmer failed to attend and Mr. Ramsey owned a small tract, he didn't attend. I think at first the Applicants here represented all the operators who deliberated on this matter.

Q. Who was the Phillips' representative?

A. H. H. Kaveler.

Q. That is yourself?

A. Yes, sir.

Q. So you concurred in that figure?

A. Yes, sir.

Q. Can you tell the Commission how you arrived at the figure 20 percent personally?

A. Yes, sir.

Q. All right, do it?

A. I arrived at that figure in my own mind and concurred in the conclusions of the Operators committee be-

cause I thought that distribution recognizing the value of current income to the tract and recognizing the recoverable oil contributed by the tract was the two factors which [fol. 829] should be taken into account. An oil property has value on two things as the Commissioners well know, part of the value is attached to the dollar income attributed to the properties daily income. The property is valuable that has a high daily income, less valuable if it has a low daily income. A property is valuable in respect to the recoverable oil which lies underneath, which represents enriched income,—two things should be taken into account in these Unitization, is the contribution that the tract makes with respect to the current daily income and the contribution that it makes in recoverable oil. Now the problem as counsel suggests is whether the current daily income should be weighted one per cent and the recoverable oil contributed shall be weighted 99 per cent or whether the weighting shall be in reverse to that. Unfortunately there is no mathematical solution to that problem, but one must exercise good and prudent judgment and it was the judgment of the Applicants in this case that using current income to the extent of 20 and the recoverable oil attributable to the extent of 80 percent was a fair and reasonable balance between the two factors and it was on the basis of that reasoning that I as a member of the operating committee concurred in the present equity formula.

Q. I will ask you if that is the upper figure?

A. I think the answer is yes, it couldn't be otherwise.

Q. I will ask you why it wouldn't be just as equitable to treat the permiability of this sand as you have the permiability and take a weighted average by the field, or [fol. 830] by segments, or by tracts and use that as a factor the same as you did the porosity in determining the amount of recoverable oil in place under these segments or tracts.

A. I am sure the Commissioners are familiar with the fact that many times a well is drilled into a productive sand, the sand is known to have porosity and known to have oil content, recoverable oil, and take even the fact of great thickness, surprisingly enough, a few of those circumstances the potential of the well is low, the poten-

tial is low and in the face of that low potential it might go so far as to predict that the examination of the rock cut out of that 8-inch well bore had low permiability and one might conclude and say, yes this well has a low potential, it produces only ten barrels per day because permiability of the rock immediately adjacent to that well bore is very low in that respect, and would be a consistent engineer--- fact low permiability immediately around the well bore caused low potentials. The Commissioners has- seen wells of that character. The old familiar process of lowering nitroglycerin into the well at this point and discharging nitroglycerin, shooting this sand, breaking down barriers of low permiability, producing larger potentials,— because a man shoots his well with nitroglycerin and increases the potential from ten barrels a day to maybe 10,000 barrels a day does not increase the amount of recoverable oil under that lease. The shooting process simply opens up cracks, breaks through a barrier of low permiability, permits entrance into adjacent high permia- [fol. 831] bility strata. The high potential that is developed is no reflection in the increase in the amount of oil in that tract. High potential reflects the fact by some mechanical means he was able to disperse the permiability of the rock so the permiability of the core is no measure of recoverable oil of the lease beneath this tract. There is no way therefore in which one can take the permiability of the core and account for certain production practices which rendered the well of such character as to be different from the permiability reflected in that core analysis. You are familiar with the process of acidization, where acid is put into the well, pumped in the formation of low permiability, the acid is removed and the result is part of the rock is dissolved and removed and thereafter the well has a high potential. So that to measure the potential of any core analysis is to obtain a figure which has engineering significance but it isn't to take the figure as counsel suggests, and be used as a measure of the amount of the recoverable oil which each attract contributes to this unit. Permiability is not susceptible to that kind of analysis. I particularly wish to call your attention to the fact that the permiability of the core is one thing and the potential

that the operator can develop in his well by shooting and acidization is another thing. There have been wells shot in the West Medrano pool and there have been wells which have been acidized.

Q. Now as I understand this 20 per cent figure you have taken 20 percent of the recoverable oil and divided it up [fol. 832] between the persons entitled thereto in the proportion of which the production of their respective wells bears to the total production?

A. Roughly speaking, Counsel, I suppose the answer is yes, sir, but insofar as I can answer it.

Q. That is what you have done?

A. Substantially, yes, sir.

Q. You took that 20 per cent of the recoverable oil and did that with it just as an arbitrary matter?

A. If counsel will permit me, he isn't referring to 20 per cent of the current oil but 20 per cent attributable to the pool.

Q. I asked you if this 20 per cent figure we have been talking about did it represent 20 per cent of the recoverable oil?

A. No, sir.

Q. It doesn't, what — it 20 per cent of?

A. Exhibit 53, counsel, and the termination of Table 1, in the column marked arabic number eleven being third to the last column shows a number 51374.5 thousand dollars.

Q. I will ask you if that isn't 20 per cent of the recoverable oil expressed in dollars, isn't that the same thing?

A. This is the total for all of the tracts in the field insofar as recoverable oil and gas is concerned.

Q. That recoverable oil and gas represented in dollars, isn't that right.

A. Well in dollars so far as the figure of $1.52 per barrel and 5c per thousand for gas is concerned.

[fol. 833] Q. I understand you have reduced it to dollars, and you took the 20 per cent of the dollars, isn't that right?

A. That figure which I just gave you, Counsel, in Exhibit 53 should not be confused. In Table 3 of Exhibit 53, Counsel, a consummation is given in column 1, that was the daily oil income, that figure was 8077.42, total dollar income counting oil at $1.52 a barrel and gas at 5c per

thousand to the West Cement Medrano pool during the months of June and July, 1946 was this number of dollars, these are the unit totals. The unit totals for recoverable oil and gas in place and the unit totals for daily income,—now each tract contributed to that total, for example, tract A contributed a total of X dollars to the recoverable oil and gas and contributed a total of Y dollars to the current income. Now the procedure as set out in Exhibit 53 was for each tract to do the following,—to divide dollars on oil and gas contributed in the terms of oil and gas to the total, X over 51374.5,—that gave the percentage of contribution to the recoverable oil and gas. Over in the right hand column on the board dollars Y contributed by the tract to daily income was divided by 8077.42 and that gave a number which gave a percentage of the current income. Each of these could be expressed as percentage is multiplied by 100, so then those figures 51375 or 51374.5 represents 100 per cent and 8077.42 represents 100 per cent each, 100 per cent of their respective columns, and 100 plus 100 is 200 which is greater than the whole so that the weighting process that went on involved taking 80 per cent of the [fol. 834] percentage is here obtained by dividing X by the total and taking 20 per cent of the figure here obtained by dividing Y by its respective total, the sum of 10 per cent or 100, and 10 per cent of 100 gives you 100 and that was the way it was accomplished, the arithmetic part to bring out the 20 percent,—those percentages are set forth in table 2,—I call your attention, Counsel, to Table 2 of Exhibit 53.

Q. Mr. Witness, you are testifying to the Commission?

A. Mr. Commissioners, I call attention to the fact and ask Counsel that he should note on Table 2, Exhibit 53 that tract 15 being the Amerada-Beamer tract No. 2, 2.096 per cent of the total income, tract No. 15 had 2.096 per cent of the total income and had 0.896 per cent of the recoverable oil and gas attributed to the unit so that the equity assigned to that tract is had by taking 50 per cent of 0.869 per cent and 80 per cent of that and adding thereto 20.9 per cent and,—or 20926 per cent which results in that tract having an equity in the unit of 1.114 per cent and that 1.114 per cent represents 80 per cent of the percentage by

that tract to the recoverable oil and gas and it represents 20 per cent of the contribution that tract made to the current daily income to the pool.

Q. I will ask you whether or not that is equivalent of taking 20 per cent of the total oil and gas and dividing it out amongst the persons entitled thereto in the proportion which their current income bears to the total income in the pool?

A. I could answer that question, but you have an inconsistency there,—I would be glad to cooperate with you [fol. 835] and correct it, is the first part of your question, if you will insert 20 per cent of the value of the oil and gas produced daily.

Q. As set out in the Plan?

A. Yes, sir, that's right.

Q. Now then, I will ask you why you didn't apportion all the oil out accordingly?

A. I think that would be unfair to the leases that weren't drilled as densely as other leases, would it be fair to those leases where the operators shot or acidized the well to establish high potentials,—it wouldn't be fair to those leases that contributed great thickness, therefore large amounts of recoverable oil go to leases whose wells had less than average permiability,—many reasons why this equity should not be disturbed solely on the basis of daily potential of the wells.

Q. After this, if it does become a Unit, after this area becomes unitized will not all the wells be operated with equal science and operating skill?

A. Yes, sir.

Q. Then will not the wells that are poorly operated at this time be excellently operated at that future time if unitization is made?

A. Yes, sir.

Q. Then why should you make a distinction between tracts upon which wells are operated better now than,——

By Mr. Williams: Is there anything, any evidence in [fol. 836] this record that certain wells are being operated more poorly than others?

By Mr. Reford Bond, Jr.: Let me finish my question?—— than on tracts on which the wells are not operated as effi-

ciently and completed as with as great a degree of science as they are on the other tracts.

A. Well, in my previous answer Counsel, I was going along with you in your use of the words "poorly operated etc.," in my opinion all the wells in the field are being operated conservatively and with the highest degree of engineering skill.

By Mr. Williams: Including Palmer wells?

A. I don't know about that.

By Mr. Reford Bond, Jr.:

Q. In other words, you say the man that gets the bigger wells, that is an element of luck, more than it is a matter of operation, that is in this particular pool?

A. I should think that is a well established fact in the industry some people suffer a natural advantage and some people suffer a natural disadvantage.

Q. You propose and seek to take a natural advantage that these people have suffered to the extent of 80 per cent, is that right?

A. No, sir.

Q. You are only allowing them an advantage in the amount of 20 per cent?

A. The problem here is to distribute equities in a Unit that has a contemplated type of operation which is not [fol. 837] now indulged in nor has it been indulged in in this common source of supply. So your reflections on the significance of current income has no bearing on the contribution each tract makes to the propose- unit operation.

Q. It is your testimony that the permiability figures obtained from the core analysis are not sufficiently correct so as to reflect the actual reservoir and sand conditions, so as to make an equitable division of the oil and gas amongst the persons entitled thereto if you use that figure in computing the amount of recoverable oil to each tract, is that right?

A. That is not my testimony.

Q. That isn't your testimony and still you haven't used the permiability factor in the formula to divide the oil amongst the persons entitled thereto?

A. I have repeatedly answered that question and I appeal to the record in the matter.

Q. You do not need to answer that,—I call your attention to Exhibit 71, and to line 17, Table 9 about which you have testified and I will call your further attention to the fact that line 17 and the figures set out therein in percentages are obtained by using the figures that appear in line 7, 11, 12, 14 and 15 of said Table 9, will you please explain to the Commission the method and process which was used in combining those various figures to obtain the results in line 17?

By Mr. Williams: The witness says he will save time [fols. 838-839] to let him put it on the board and have it read for the afternoon session.

By Chairman Bond: Very well, recess to 1:30 P. M. [fol. 840] Chairman Bond: Gentlemen, are you ready to proceed?

(Reporter's Note: All parties are now ready to proceed.)

Mr. Kaveler recalled to the stand.

Reford Bond, Jr., examines the Witness:

Q. You are the same Mr. Kaveler that was on the stand before lunch, will you answer my question now?

A. Before I ask for that question to be read, I ask the right to re-examine the answer that I gave this morning before I answer it, and I ask that the question be read by the reporter.

(Reporter's Note: Whereupon, the reporter who was in the courtroom when court adjourned at twelve noon, was called again to read question and answer desired by the witness and attorneys.)

A. (The Witness continues) As I understood counsel this morning, the question as framed, I was confused by the indirect placing of the words, my testimony is that the core analysis and all reservoir data is adequate to make for distribution and equities in this unit, I wish to place that answer in the record in the event my answer this morning was improperly placed in the record. My testi-

mony is consistently that the permeability data is adequate for the fair distribution of the equities. If I remember the question given to me just before noon, it was in respect to Exhibit 71, Table 9, whereas, where counsel inquired if I would explain lines 11, 7, 12, 14 and 15 were used to obtain the value used in line 17. (The witness goes [fol. 841] to the blackboard.) Now answering counsel's question, I would like to draw a wedge diagram of the Medrano sand as represented by Exhibit 25 hereto introduced and on which Exhibit 25, the oil zone is colored red and this gas zone colored yellow. (Witness draws exhibit on board.) The drawing on the wedge diagram, the gas on the gas-oil content originated in the pool and the water-oil content in the pool, so that the between the gas-oil content and the water-oil content lies the saturated portion of the reservoir and the gas saturated portion of the source of supply, counsel's distribution as to line 17, Table 9, Exhibit 71, is concerned with the following issues: Line 4 of Table 9, the original reservoir structure of the oil-gas content is 2,000 pounds per square inch, which is the condition of the gas-oil content for any original production in the pool. Line 5 of Table 9 represents the pressure existing at the average depth of the original oil saturated section and that average pressure is 2,130 pounds per square inch which was so-called reservoir pressure or pressure before any production in the common source of supply.

Q. May I interrupt you and ask what the original reservoir pressure at mid-point oil zone in Segment E, apparently to be lower than the other segments?

A. For the reason that set out on Exhibit 56 on examination, you will find the oil-water contact in Section E is [fol. 842] substantially higher than Sections A, B, C, and D. The Segment E is in hydrostatic balance and because of the high water the pressure is somewhat lower than an equivalent of said strata, if you desire further explanation I will get the exhibit.

Q. Without argument, perhaps you can explain how the pressures are the same as the gas-oil contact. I believe the gas-oil contact in Segment E is different than the other segments.

A. That is true. 100 feet of water exist, a pressure of

43 pounds per square inch, there is 100 feet column of water, a 100 foot column of oil, the type we are dealing with in the Medrano sand exerts a pressure of 35 pounds per square inch and 100 foot of gas column will permit the general gas to weigh about 7 pounds per square inch, so that you have a balanced connection between Areas D and E with area E having a heavier column of a water which is a heavier pressure in the oil zone, so the gas-oil contact is substantially the same and the answer just comes out that way.

Q. All right, go ahead.

A. I have written on the board the original reservoir pressure. This mud position of oil zone which is 2130 pounds per square inch at the time, add sub-zero is the time of the first oil production in the various segments and in the instance you ask in respect to Segment A, will you use my example?

[fol. 843] Q. If you would take Area B, since the testimony is about Area B.

A. At the time plus-0, at the first oil production in Area B. The pressure at the mid-point of the oil zone had fallen to 1272 pounds per square inch, that is the condition repeatedly referred to. That is brought about by the production of gas. Gas was first produced from Segment B in large quantities and the decline in the pressure in oil sand from average of 2130 pounds per square inch to 1272 pounds per square inch, line 17 of Table 9 of Exhibit 71, is a solution of the problem. Every accounting of the depletion of the oil saturation in the oil zone of the reduction of pressure and the consequence is what the pressure is, 2130 to 1272 pounds, the pressure is released on the part of the reservoir, gas comes out of solution MC oil and little bubbles appears all over the oil bearing section, whereas, originally the porous phase, the drains of sand, the porous, was occupied by 20 per cent connate water, 80 per cent of the large phase bearing oil, but because of the production of gas only and the decline in reservoir pressure, the release of ~~pressure in~~ the reservoir caused the gas to come out of solution and occupy porous phase, if you don't stretch the imagination, it is this way because it had any production, this oil sand was completely satu-

rated 20 percent connate water and 80 crude oil, that was shown as the pressure as released gas appeared and foamy [fol. 844] condition appeared and it was by the bubbles coming out of the crude oil at the porous space at the time of plus sub-zero, the porous space was then filled with 20 per cent connate water and less than 80 per cent oil saturation, the remaining 80 per cent taken up by the bubbles were taken out. When the gas bubbles appeared in the core space, it pushed gas out of the oil section. Two things can't occupy the same space, when oil appeared, line 17, Table 9, Exhibit 71 is an engineering approach of a computation, it will amount to the oil space at the time of the gas that the computation was introduced in the hearing. For the reason that the owners of the oil sand must have their acreage properly evaluated in respect to the production, of gas production, so that the contribution to the unit of this oil acreage can be properly taken into account. Now proceeding with Table 9 and the calculation as represented by line 17, I call counsel's attention as follows: That this 2130 pound pressure, line 8, reflects that there was 427 cubic feet of gas in solution per barrel of stock tank oil. When the pressure had fallen up 2130 to 1272 pounds, line 9 shows that only 260 cubic feet of gas reduced in solution, in other words, reduction from pressure in this oil zone of 1230 to 1272 per square inch caused a decrease of 427 to 260, which was 167 cubic feet, which has a volume as given by line 9. I think you understand.

[fol. 845] Q. Isn't that line 10, Mr. Witness?

A. Thank you, that is correct. In other words, referring to the first oil production, in Segment B, the pressure declined due to the gas wells, caused an elevation in the oil sand of 670 feet of gas that caused that gas to appear*ed* that gas formed bubbles or foam-like condition in the oil sand. Now, the problem is to determine just how much space did the 127 cubic feet of gas at a barrel of oil occupy in the porous space between the groups so that we can ultimately express and in the terms of the original connate water in the terms of the remaining oil and terms of the gas bubbles in the depletion and the rest of the items referred to by counsel, permit that calculation. I pass to line 12, counsel, which I wish to state is inverted insofar as

the formula is concerned, line 12 is not correctly written in the exhibit and the formula should be involved throughout so that line 12 of Table 9——

Q. You mean to say that this engineering report is not correct?

A. As far as typographical reproduction.

Q. You will correct that now?

A. Yes, the formula that I refer to, should read on line 12, product factors 14.7, next, item 11, were divided by the product of the factors comprising the items of line 7, the number 520 and the number 1. The numerical value of columns A, B, C, D and E are correct as given in the exhibit.

Q. You have explained to the Commission how you ob- [fol. 846] tained the figures set out on item 11.

A. Figures set out on item 11 were taken from the petroleum engineering handbooks which gave the factor, which factor was used to correct the gas;

$$\frac{P \times B = nn \times}{R \times T}$$

Some people enter pressure on the best, as in perforation tummy. That is the ideal law where we use the tums capacity, later we have as volume n as number of moles and R as universal gas contain——

Q. What is——

A. Universal gas constant that is the gas equasion.

Q. Where do you judge the factor of the equasion and who figured it out?

A. That is by the United States Bureau of Standards?

Q. From a table?

A. Yes.

Q. Explain to the Commission what the table represents.

A. The table represents a large compilation of figures that sets out the ideal gas constant as applied to various types of gas.

Q. What is the production of it, what did you use it for?

A. The production of the equasion.

Q. Now in the equasion, the factor represented by capital R?

A. The factor makes this equasion valid.

Q. What is the production of it, what does it do?

[fol. 847] A. I will explain that in this manner, if you will permit me to explain the letter Z. The letter Z is experimentally the quan-ity of various types of gasses and it is the greater of the equasion of P, V, N, R and T. That is the factor contended in line 11 and which is available of a large amount of experimental data and which, in the instance of Section B, has a valuation of 0.872. The point of the equasion, if one knows the volume of gas, B at some stated pressure of twice of one and some stated temperature of twice of one, then it is possible to compute the volume of gas at some other pressure and temperature of;

P Sub 2 and T Sub 2
n R

n and R being the condition that cancel zero.

[fol. 848] A. (Continued) Now, it is desired to know what volu*em* that occupy in the reservoir at 1272, that could be obtained in two sets of equations. We have here in line 12, .01118, the volume at reservoir pressure of 1272 pounds per square inch.

Q. That is at the time the oil discovery, the time of the oil discovery, is that correct? And at the time the pressure was 1272?

A. Yes. Now, 167 cubic feet of gas in the reservoir was 1.109 barrels of oil, so that the estimated 167 divided by 1.109 is 150.5 cubic feet, so that at that point we reach the conclusion that the time referred to, the gas evolved at the time of oil discovery amounts to 150.5. We desire to convert that volume of gas to the volume it would occupy in the reservoir at 1272, which can be done, can be computed by multiplying line 14 by line 12. Multiplying that 150.5 multiplied by .01118, Line 12 multiplied by Line 14 equals Line 15, which is 1.685 cubic feet. Now, the reservoir of the Medrano field was occupied, 20 percent, by connate water and it was originally occupied, 80 per cent, by crude oil. Now the crude oil reservoir liquid and the pressure balance was reduced from 2130 to 2172 pounds, the result being 1.685 cubic feet of gas bubbles for each barrel crude oil remaining in place, so that the oil, the 80 percent oil saturation is to be reduced by the amount of the bubbles.

If there is 1.685 cubic feet of bubbles or foam to each barrel of crude oil, then the total is 729 cubic feet, of which the bubbles amount to 1.685, that divided by 7.29 equals [fol. 849] 23.1 per cent. The reservoir is occupied by gas and since that is 80 percent of the total reservoir space the percentage of the total space occupied by gas is 23 per cent of 80 per cent.

Q. Now, as I understand it, in order to obtain the estimated oil in place in thousands of barrels, you consider that 23 per cent of the oil is lost through, is lost, will not be recovered?

A. Yes.

Q. Is that oil still in segment B?

A. It is in the area but it is not recoverable.

Q. Why do you say that entire 23.5 per cent is unrecoverable?

A. By this authority, the gas sand lay above the oil,—there was no oil there originally and when gas was produced from the gas cap and the pressure was decreased that created the foam when dry gas sand is put into water it will soak up water and the water can't be squeezed out,—I think the application of common sense would be sufficient reason for that question.

Q. Do you mean that you have reached this conclusion by common sense, by the application of common sense,—can you cite to the Commission any particular pool where such conditions exist and in which those reasons were actually offered?

A. Yes, there are plenty of them,—I think the West Cement——

Q. Don't you know that all of the oil has not been produced in the West Cement pool,—can you tell any other pool which will show the truth of the statement you have made.

A. The Erath pool in Louisiana is one and I can name [fol. 850] a dozen others.

Q. Will you give the Commission the figures and also the experience in those pools that prove that?

A. Well, I don't have that with me, I will get them if you desire them.

Q. Can you name any other pools in which actual experience has been had?

A. Yes, the McZarney (?) pool in Arkansas is one in which an attempt is now being made to——

Q. Wait a minute, you mean you are citing a pool which is still producing oil?

A. Certainly.

Q. Do you mean to say that you know how much oil will still be produced when you have actually taken all the oil out of that pool,—you believe the oil is still there?

A. Yes.

Q. Are not the recognized methods of production and calculation, do they not show the real proof of how much oil you can produce?

A. Not necessarily.

Q. I'll ask you if that gas found in the West Cement Medrano pool doesn't contain distillate?

A. Well, I think there is a small amount of condensate, yes, very small.

Q. I'll ask you if it is a fact that in pools similar to this pool that gas is actually produced?

A. Yes, with substantial waste.

[fol. 851] Q. So that you don't have 100 percent loss of the oil that has been displaced by the gas?

A. Now, but the chances are you will have 99 percent loss, which is almost a 100 per cent.

Q. Do you have any actual figures on that?

A. Well, the judgment of myself and other engineers.

Q. Well, you haven't allowed a single barrel of oil that has been displaced by the gas?

A. I have not because that oil is unrecoverable.

Q. You have no actual figures or facts, for that, have you?

A. I have by experience as a Petroleum Engineer.

Q. But you can name no field which has been fully produced and exhausted, which will prove that answer.

A. I think there are many fields which have been exhausted that will show the impropriety——

Q. I am talking about where the oil displaced by the gas is 100 per cent, as is shown in this formula.

A. I think that has been amply shown.

[fol. 852] By Mr. Reford Bond, Jr.:

Q. Now Mr. Kaveler, I believe you testified that there has been testimony here that the Dome-Bo well of the Stephens Petroleum in Section 29 is not a dry hole?

A. Is not or was not?

Q. Is not and was not?

A. Well it was called a dry hole at the time it was drilled.

Q. Do you say that that is a dry hole now.

(At this time there was talk had off the record between Counsel.)

By Mr. Reford Bond, Jr.:

Q. I believe your testimony is that the sand on the Dome-Bo lease contains productive oil, is that correct?

A. Yes, sir, as reflected by the exhibits which Mr. Montgomery introduced.

Q. Now I will hand you what has been marked Exhibit 77 and I will ask you to state what that is?

A. This purports to be a plugging record on the regular Corporation Commission form pertaining to the Indian Territory Illuminating Company, Box 1251, Bartlesville, Oklahoma, Caddo County Section 29, Township 6 North, Range 10 West and it says "West side Cement field" it says, farm name, Community Darby, well No. 1, character of well (whether oil, gas or dry) dry.

Q. I will ask you to state if the description of that well as given, I will ask you to look on that map and identify this well with the well that your map shows in that particular area?

A. Purports to be well which has been marked on our [fol. 853] Exhibit as the Stephens Petroleum Dome-Bo.

Q. I now hand you what has been marked Exhibit 78 and I will ask you to state if that isn't the well plugging record of the Corporation Commission on the Dome-Bo Stephens Petroleum No. 1, that is known as the Dome-Bo No. 1 at this time?

A. Yes, marked Exhibit 78 and purports to be a plugging record applying to Ray Stephens Incorporated Brown well which is located in the South half of the Northwest of Section 28.

Q. Now then, Mr. Kaveler, Exhibit 77 which is the plugging record for the Dome-Bo states as follows: "Work commenced January 11 and completed March 1, 1938. Set and cemented 6-5/8" OD, 24, 10 THD. Standard seamless steel casing at 5706 feet with 1100 sacks of cement. Drilled cement plug to 6652 feet. Perforated 6-5/8" casing with 48 holes from 6560' to 6650'. Result; approximately 6 barrels of water per hour, no show of oil or gas. Set Lane-Wells bridging plug at 6480 feet. Plug would not hold. Laying second Lane-Wells bridging plug and set at 6435 feet. Dumped six sacks of cement to 6407 feet and swabbed to cement plug. Tested dry. Perforated 6-5/9" casing from 6055' to 6100' with 89 moles. Result; approximately 3.6 barrels of water p-r hour, trace of dead oil, no gas showing. Set a Lane-Wells bridging plug at 5800' and dumped six sacks of cement to 5765'. Cement to,—Tested dry. Perforated 6-5/8" casing from 5470' to 5498' with 17 holes. Result: 49 barrels of water per hour, not gas or oil showing. Set Lane-Wells bridging plug at 5450' and dumped six sacks of cement to 5419' tested dry. Perforated 6-5/8" [fol. 854] casing from 5330' to 5346' with 10 holes. Results: 54 barrels of water per hour, no show of oil or gas. Set Lane-Wells bridging plug at 5300' and dumped 6 sacks of cement to 5252', at tested dry. Perforated 6-5/8" casing from 5040' to 5045' with 5 holes. Results: 63.6 barrels of water per hour, no oil or gas showing. Set plug at 4900' filled hole with rock at 4890' and dumped 6 sacks of cement to 4850'. Shot off and pulled 4016' of 6-5/8" casing. Set plug at 4002' and dumped 6 sacks of cement to 3990'. Perforated 9-5/8" from 3480' to 3507' with 19 holes. Results: 15.6 barrels of water per hour with no show of oil or gas. Set a wood plug, no show of oil or gas, at 3517' and dumped rock to 3508' and cement to 3459'. Shot off and pulled 1500' of 9-5/8" casing, keeping the hole filled with mud while pulling. Filled hole with mud and capped with 3 sacks of cement." Now considering the facts that are contained in this plugging record I will ask you to state if they have the effect of changing your testimony about the productivity of the sand under this well?

A. Mr. Montgomery testified it was set to that well Mr. Attorney. I think he testified he was present there

during the course of the drilling of the well. It is Mr. Montgomery's opinion that the thickness of productive sand assigned to the well as reflected on Exhibit 56 and 57 is a proper representation of the amount of productive sand within that well, and I concurr with Mr. Montgomery's conclusion. I think that the equity assigned to the Stephens Dome-Bo tract in this Plan of Unitization is fair [fol. 855] to all parties and is consistent with the indicated productivity of the tract.

Q. Then the facts that I have read you from the record of the Commission do not change your opinion in the matter?

A. Do not change my opinion as to the contribution that the Stephens Dome-Bo tract is making to the Unit operation, no, sir.

Q. I want to call your attention to the fact that Mr. Montgomery testified that his sand thickness map was not a map of production of oil or gas sand but of sand containing oil?

A. Yes, sir, I understood Mr. Montgomery.

Q. And he definitely testified that it did not represent productive sand?

A. That is my understanding,—and my further understanding is that Mr. Montgomery picked the interval containing productive oil and gas.

Q. You will remember that his testimony was that he included all sand, no matter how small the amount of oil it contained or whether or not it was recoverable?

A. Leaving it to the Engineering committee how much of that interval was to be counted as productive, yes, sir.

Q. You and the Engineering committee counted it all productive?

A. All that was picked by the geological committee, yes, sir.

Q. You mean all that was included in the sand thickness map?

A. Yes, sir.

By Mr. Reford Bond, Jr.: We offer Exhibit 75, 76, 77 and 78.

[fol. 856] By Chairman Bond: Received.

(The exhibits are received in evidence and will be attached to this record in a separate container.)

By Mr. Williams: We have no particular objection to this log on the Dome-Bo, it is simply a statement by the operator of the well as to what he did. These Applicants are not bound by that statement.

By Mr. Reford Bond, Jr.:

Q. Now Mr. Kaveler, I call your attention to the Farwell well about which you have testified,—the Farwell No. 2 and I will ask you if it isn't a fact that you stated that the migration of oil in the Medrano sand in connection with your testimony about that well was all and not substantial, is that correct or do you wish to change that statement?

A. I stated to you a statement which Mr. Stephens and his organization gave to me during the course of the Operators meetings, to the effect, that that well originally purely a gas well is now producing some crude oil. I haven't inquired as to the exact quantity of crude oil. I referred to that as ample evidence of the fact that oil is being sucked out of the oil zone up into the gas part of the field. If you desire to have information on the quantity of crude oil production I will be glad to get that. I think I could get it in a short time.

[fol. 857] Q. I will ask you to state if you didn't testify that the migration of oil in the Medrano sand was small and not substantial?

A. Well, I don't think I testified to that. No, sir, I don't think that was my statement.

Q. If you did, you want to change that statement now?

A. The amount of oil sucked up into the dry gas sand in the Medrano pool is in my opinion most reasonably estimated by reference to Table 9, Exhibit 71, about which we testified.

Q. I am talking about the migration of oil in the Medrano sand?

A. I think all that testimony went to that point.

Q. I think you answered the question,—that is all I have to ask this witness at this time.

By Chairman Bond: Very well,—any further cross examination?

By Mr. Adams:

Q. In Mr. Bond's cross-examination I take it that you were joking Mr. Witness when you referred to the manner which Palmer Oil Corporation were doing their operating?

A. I suppose I was.

Q. There isn't anything,——

A. No offense meant.

Q. Nothing wrong in the manner in which Palmer is operating?

A. No, sir, he is an operator without being excelled, nonpareil I believe is the word.

Q. I wonder if you would mind just for a moment put- [fol. 858] ting Exhibit 65, 66 and 67 on the board?

A. I would be glad to put 66 there (witness puts maps on the board).

Q. In your testimony you have referred to on many occasions to your conclusions that the various segments constituting the, what is commonly known as the West Cement Medrano area as a common sourse of supply, I would like to ask you to state whether or not that is your opinion based upon Mr. Montgomery's testimony or whether that is your independent opinion?

A. That is my opinion based substantially upon Mr. Montgomery's testimony.

Q. You say substantially, what you mean by substantially?

A. For the large part my opinion as to one common source of supply is based upon Mr. Montgomery's conclusions respecting the conclusions of his and his geological committee.

Q. As a matter of fact, isn't it a fact Mr. Witness when you started out with the thought that you wanted to secure for Phillips Petroleum Company compulsory unitization of the five segments here, that you procured the appointment of this so-called geological committee and secured their first report which indicated that these segments were separate producing units, I believe it is Exhibit 68, and that after you got that report you discussed it with your

Counsel and they informed you that you would have under that report five separate sources or five separate common sources of supply which would not permit under the Oklahoma law the compulsory unitization of these five sepa-
[fol. 859] rate segments as one pool and then you took it up again with the geological committee and under your guidance procured this, the preparation of these maps which have been offered and introduced in evidence here showing this pool by segments but which you interpret constituting one common source of supply, isn't that correct?

A. Does Counsel regard that as a question put to me?

Q. Yes, sir.

A. Before I can answer a question of such length I will have to require the connotation of the word "you" in the use of the personal pronoun you make it appear that Phillips and I assume is asking for the unitization of the field and would make it appear that Phillips Petroleum "I" personally, that "I" or Phillips Petroleum Company had a substantial influence on the course of deliberation of operators. Since that isn't true I feel I have a right to decline to answer that question.

Q. Referring to Exhibit 65, which is a diagram of the Sterba fault on the East side of the Magnolia-Cement-Henley lease, you will note Mr. Witness that there is a substantial area between the Medrano sand on the East side of that fault and the Medrano sand on the West side of that fault, I will ask you to state if you know if that area which I believe is approximately 180', if I have read these exhibits correctly, that is a strata of earth?

A. I presume all those exhibits purport to represent stratas of earth.

[fol. 860] Q. Which exists between the Medrano sand on one side of the fault and the Medrano sand on the other side of the fault, is that correct?

A. Mr. Adams, those exhibits are introduced during the course of Mr. Montgomery's testimony. I wasn't too attentive,—I think he is more competent to testify as to what those exhibits purport to show than I am.

Q. What I would like to know, what I think you should say for the benefit of the Commission, is whether or not

your pronouncement of these various segments as constituting a common source of supply is your own opinion or whether you are merely basing your testimony in that regard upon Mr. Montgomery's testimony?

A. I think I should say for the benefit of the Commission that try as I could I cannot encompass all the aspects of the testimony in this case. While I would like to be competent to testify as to the geological features, I haven't prepared myself to testify to all these aspects, though am I a geologist and I do not suppose I would attempt to disagree with Mr. Adams what he attempts to show, I am not competent to testify in respect to those exhibits because I haven't studies them with sufficient detail.

Q. Well then, Mr. Witness, whatever you said about these five segments constituting a common source of supply is merely your opinion based upon Mr. Montgomery's opinion, is that correct?

A. Of my general knowledge of the field.

Q. You do have an opinion formed from your general [fol. 861] knowledge *knowledge* of the field, is that right?

A. Is that right, yes, sir.

Q. That it constitutes a common source of supply?

A. Yes, sir.

Q. Okey,—if you have that knowledge, and if any part of the evidence which you offer here is your own conclusion and not based on Mr. Montgomery's testimony, then I would like to - you come here to these Exhibits and mark on each the point of contact of the Medrano sand on one side of the fault with the Medrano sand on the other side of the fault if it is a common source of supply there must be adequate connection, must not there?

A. Are you going to give me a chance to answer the other question.

Q. Okey.

A. That question cannot be answered for the reason that the Exhibits No. 65, 66 and 67 are diagrams of the conditions prevailing only at one point of under the entire fault system, so the question cannot be answered because of the limitation of the Exhibits.

Q. You heard Mr. Montgomery's testimony, these Exhibits are a fair representation of the facts as they exist

with respect to the Medrano sand at the location of the fault.

A. At the points which each of these exhibits purports to represent, yes, sir.

Q. What geological map do you have that has been presented here that shows the connection between the [fol. 862] Medrano sand on one side of the Sterba fault and the Medrano sand on the other side of the Sterba fault, if you have such, will you produce it?

A. I think in order to answer the question in reference to Exhibit 54, I believe Mr. Montgomery's testimony is to the effect that the faulting in this common source of supply where faulting occur-ed was a greatest at the structurally lowest point. If his testimony were reexamined it would be found that these faults peter out towards the main fault, the defining the North limit of the field. There is no evidence that the fault there, through there are so great in magnitude as they are at the point Mr. Adams chooses to describe or at any point at the lower extremity of the pool. Based upon that conclusion I feel it is one common source of supply and I come to that common source of supply conclusion for another substantial reason and that is this, the Corporation Commission has had long and continuous hearings on this field during it's life and the question of faults or no faults has been argued at great length before this Commission.

[fol. 863] (Reporter's Note: Answer continued from previous page.)

A. and in fields has been regarded at great length and the Commission found why one common source of supply, and I reached that conclusion.

Q. Do you have a red pencil, Mr. Witness?

A. No, sir, do you?

Q. Referring to Exhibit 54, will you mark with an "X" in which you conclude that was effective communication in the Medrano formation through the fields?

A. The area that I now draw in a circle, being in the upper extreme of the field in each instance and a dotted circle increasing the whole field between the communication between the Medrano sand on each side of the field on Bois d'Arc, my conclusion is that there is a possibility

of communication along the entire course. Mr. Bond, Jr., described them as being a pen because no pen is absolutely hog-tight and there can be communication through such a pen.

Q. Now referring to the exhibit, I think it is Exhibit 72, referring to that Exhibit 72, will you take your red pencil and mark on that with respect to the field lines where you think there is connected communication through the field lines in the Medrano sand.

A. I draw on Exhibit 72 a circle, similar to that, similar to the one on Exhibit 54 showing that the principal [fol. 864] communication was at the northern extremity of the field and a dotted line showing the connection throughout the entire course.

Q. And that is your conclusion irrespective of the fact that the Isopar Map, Exhibit 72, that was prepared by your so-called engineering committee, if it reflects anything, it reflects a complete log at the pressure lines of those very fields, isn't that true.

A. If it's so drawn in that manner and not for the field.

Q. Are you telling the Commission, then, that your Isopar map is not correct?

A. No, sir.

Q. It is your engineering Isopar map?

A. It was drawn for the purpose of not what you use it.

Q. You prepared it?

A. I assisted in it.

Q. Will you tell then what to put on it?

A. No, sir.

Q. What do you do with it?

A. I had general supervision on it with the committee, as I repeatedly told you.

Q. Referring to Exhibit 72, the Sturba field in the top section that you have said there would be communication, you notice on one side of the field at the top portion [fol. 865] thereof, it reflects an Isopar of 900, while immediately on the other side of the field line it shows Isopar of 950, do you say that reflects communication?

A. The only way J can answer that in the fishing expedition, Mr. Adams, is able to fish——

Mr. Adams: Just a moment, I object to his calling it a fishing expedition.

Mr. Williams: I think that he has told what he should, he instructed the geological committee what to do and what to testify to, the whole thought of the applicant is to try to make it appear that — are perjuring themselves, how then, when the witness refers as it being a fishing expedition, I think that the witness is entitled to make his own explanation.

Chairman Bond: What is the answer?

A. (The witness continues.) I was trying to arrive at the reason that the difference from what he proposes to use it for. I will answer that, that pressure condition would not in the eyes of counsel indicate communication, but in the eyes of engineers it would indicate the communication across the field would be possible.

Q. You think it has communication?

A. I think that it has communication effective from one [fols. 866-867] source to another.

Q. If the Commission please, Mr. Williams apparently misunderstood my statement, I had reference to Exhibit 68 which was the first geological report submitted by applicants to geologists that their so-called operators committee on Page 2 of that report, I would like to read that, reading one short paragraph which is in Exhibit 68 on Page 2.

> "*Barriers*—The Edwards fault is believed to form a complete barrier between the production east of the fault and that west of the fault. There is no definite geologic evidence to prove or disprove communication between the other segments, but it is agreed that pressure measurements indicate the lack of free communication between segments."

Now, it has no relation to that report there.

Mr. Williams: Now, for the benefit of the Commission and all three Commissioners were not present, I would like for the Reporter to read the statement made by counsel.

Chairman Bond: The Commission will recess for ten minutes.

[fol. 868] Chairman Bond: Gentlemen, you may proceed.

Mr. Williams: The Reporter who took the question to which reference has been made, is not present at this time and if we may, we will reserve that matter until in the morning when that Reporter is here.

Chairman Bond: You may.

Mr. Kaveler still on the stand.

Mr. Adams: I believe that is all.

Mr. Williams: Would it be asking too much to ask for another recess, because I didn't prepare myself to go into re-direct examination.

Reford Bond, Jr.: If the court please, I have further cross-examination.

Chairman Bond: Go ahead.

Reford Bond, Jr., examines the Witness:

Q. Mr. Kaveler, I believe you testified on direct examination that it was the operator's contingent in operating this field, if the unitization is so ordered to get gas into the top of the structure, thereby raising the pressure, the reservoir pressure, and that the result of such injection in raising the pressure would cause the gas to force the oil down the structure and to produce the same from the oil wells, is that correct?

A. That is substantially correct, yes, sir.

[fol. 869] Q. That you intend to use then the gas which is not in the reservoir and whatever gas you may inject into the reservoir to act as a mechanic means of producing the oil through the casing of the oil well.

A. At least, producing the oil into the casing, there is sufficient gas to flow sufficiently is another question, but for the gas energy to produce the oil, yes, sir.

Q. In your opinion, is it possible to do it as an engineering impossibility.

A. In my opinion, the return to produce gas in the Medrano formation will result in the recovery of oil, otherwise recovered, the ultimate recovery will be 48 million barrels instead of 24.

Q. What action will the gas take on the oil to increase this recovery?

A. The gas will drive the oil ahead of it and thereby

shove it into the wells located into the lower or most part of the producing structure.

Q. Then what will happen to the gas, will it be produced, some of it with the oil?

A. Yes, sir.

Q. Then what will happen?

A. The gas will be for the most part returned to the gas formation so that it will reduce other quantities.

[fol. 870] Q. Will it be possible to capture this gas and return it to the producing formation?

A. Yes, sir.

Q. And will you return it to the producing formation under original pressure?

A. Yes, sir.

[fol. 871] Q. How many times do you use that gas and run it through the oil sand in that way?

A. Well, the answer to that would be many times.

Q. Many times? Do you consider that a good operation?

A. It is an excellent operation.

Q. Is it an economical operation?

A. It would be, yes, sir.

Q. Would you say pumping costs by operating that way?

A. Yes, you might save some pumping costs.

Q. What other saving would you make?

A. Oh, you might make some saving in the costs of operation,—normally in the production of a field there will be surface damage and this might save in that respect,—that is the cost of operation,—now you would make a saving of equipment that would otherwise be used, that would be a saving in operation.

Q. And save by re-cycling gas, is that right?

A. Yes,—re-cycling the gas and flowing into the sand again, is that a good operation,—yes, sir, it is.

Q. Then you would say that it would be of primary importance in producing additional oil, is that correct?

A. Well, I don't know what you mean by primary importance,—if the oil could be produced by water-flow operation——

Q. Well, do you propose to use water-flow operations?

A. I would think that before this operation is concluded that might be used,—I would think gas injection could be used first.

[fol. 872] Q. When would you stop?

A. When oil could no longer be produced by that operation.

Q. What percentage of the oil would be recovered by gas injection?

A. In my opinion the recovery from this field, under Unitization and gas injection there would be 48,000,000 out of 97,000,000 barrels in the pool.

Q. Now, if water-flooding is used how much more would be recovered?

A. Well, I would say an additional 10 to 15 million barrels would be recovered by water-flooding.

Q. 10 to 15 million barrels?

A. Yes, 10 to 15 million barrels more, making possibly 63 million barrels by all methods.

Q. Would that water recovery method be in line with sci*ne*tific reasoning?

A. Well, I think it would be successful to the extent that I have indicated.

Q. How would you operate the water-flood method?

A. By introducing water into those wells.

Q. Below the oil-water level?

A. Yes.

Q. How do you know that water you injected wouldn't get away?

A. Well, I wouldn't permit it to.

Q. How do you know there isn't something below the structure that would let it escape, some avenue by which it would escape.

[fol. 873] A. Well, it is a well known fact that the sand extends some distance beyond the oil contact and there would be a large enough area of water below to constitute a water-drive. It is indicated that this reservoir has about the same limited extent,—there is ample basis for believing that there is a limit to the Medrano sand.

Q. Do you know that or are you giving your opinion,—guessing at it?

A. I know it from the behavior of the pool.

Q. Could you pump sufficient water into that reservoir to raise that level?

A. Yes.

Q. And where do you get the water?

A. Well, from the Mississippi River, the Missouri River,—from any source it could be obtained.

Q. Has that been found good practice, is that considered a practical method of recovery?

A. Yes.

Q. Is it expensive?

A. Yes, reasonably so, and the recovery of this 10 or 15 million barrels of oil would justify some expense.

Q. I will ask you if that wouldn't be considered secondary recovery?

A. It might be.

Q. Is gas re-cycling a form of secondary recovery?

[fol. 874] A. Yes, it might be.

Q. Is that recovery method applied to a field which no longer produces oil or gas in commercial quantities?

A. Yes, it is.

Q. Many times I refer and I hear other- refer to water-flooding of depleted fields as recovery operations, do you know about that?

A. I would refer to it otherwise.

Q. In other words, you understand secondary recovery the operation before a field is depleted, or afterwards,—or do you make any distinction between them?

A. No particular distinction, except we refer to all of them as some method of operation, varying methods of operation.

Q. Now, if you had no gas left in the gas cap in the pool and you decide to use gas re-cycling operation, it would be necessary to get your gas from a different source of supply?

A. Yes.

Q. Now, I'll ask you if there are different sources of supply in the neighborhood of the Medrano pool, from which you could produce gas?

A. Yes, there could be.

Q. Can you name some other source of supply?

A. As I recall the names, Marchant field, Melton, as I recall those are two——

Q. Did you ever hear of the Kissler pool?

[fol. 875] A. Yes.

Q. Is it near the Medrano pool?

A. Yes, I would have to refresh my memory about those fields.

Q. As a matter of fact you know there is a sufficient supply of gas near that field for re-cycling operations?

A. Yes, I believe there is.

Q. How much would it cost you to buy that gas?

A. Well, I don't know, that would be,—we would probably have to buy it, it might be 7c. We would pay whatever the market price is or whatever we could stand.

Q. But you would use your gas again and again?

A. Yes.

Q. Now, you propose in this operation that any gas belonging to the people may be used, you propose to take the gas belonging to the people and use and use it again without any compensation to them, is that right?

A. No, sir.

Q. What compensation do you make to them, in money?

A. Well, give me a chance.

Q. Well, will you, Mr. Witness, take one of those tracts and follow through the ownership and show the Commission so that the Commission may see and determine the ownership of that gas and that compensation you say is made the owner?

A. Do you desire any particular tract?

Q. No, no particular tract.

[fol. 876] A. Tract No. 46, the Magnolia-Medrano, which, I believe, is solely gas property,—I'll use that as a sample, referring to Exhibit 53, Table 1 thereof. This tract is shown to have 10,898 acre feet of gas zone. The estimated recoverable gas was 4,419.7 MCF of gas, in other words, it may be considered that underlying tract 46 there was approximately 4,000,000,000 cubic feet of recoverable gas.

Q. Now, as we have previously testified the value of gas is 5c per thousand cubic feet, in relation to the value of $1.52 per barrel of recoverable oil, so that the tract shows the value of recoverable gas, and 5c per thousand.

cubic feet, to be $221,000.00, the equity value lying underneath that lease. Now, a similar calculation made for each one of the tracts. I observe that the value of the recoverable oil on this tract, tract 46, at a $1.52 per barrel is $30,400.00 the equity value of the recoverable oil. The value of the recoverable gas on this tract $221,000.00 and the value of the recoverable oil at $1.52 per barrel, $30,400.00, make the total equitable value of $251,400.00 for that tract. Then, if you proceed in a similar manner for all the tracts in the pool you would get the total equity value of $51,374,500.00, as reflected by Exhibit 53. And you do not take into consideration, at all, the use and value of the gas in producing additional oil?

A. Well, I don't know what you mean by the word "use".

Q. Well, you use the gas when you sheet it in the well?

A. Yes, but you also use the oil in the ground.

[fol. 877] Q. You are not going to pump any oil into the ground, are you?

A. No.

Q. And you are going to pump gas into the ground, aren't you?

A. Yes.

Q. And you are still going to use that gas?

A. Yes, we are going to use the gas.

[fol. 878] By Mr. Reford Bond, Jr.:

Q. But you still have made no provisions to compensate the owners of the gas for the use of this gas in producing the oil?

A. Yes, we are going to permit them to share in the oil wells of the Unit.

Q. I understand that, I understand your testimony, but you made no further compensation other than just paying them 5c for their gas, permitting them to share in the entire operation in the proportion of the value of their gas bears to the value of the total gas in the pool.

A. They are going to share in the sale of the gas after the gas is sold, after the termination,——

Q. Wasn't my statement correct?

A. The so-called gas people to which you refer are going to share in the revenue from oil, they are going to

share from the revenue of the gas when it is ultimately sold and they are going to get more money out of the Unit operation by participating in the oil and gas sales than they would otherwise.

Q. It is their property?

A. It is their property, it would remain their property.

Q. It is their oil?

A. Yes, sir, and it remains their oil.

Q. They are entitled to have it?

A. They are and they will have it.

Q. They are entitled to it?

A. Yes, sir.

[fol. 879] Q. They are some of the persons entitled to it?

A. They are certainly entitled to it.

Q. You propose to give them a percentage of the total oil and gas production which is equal to the value of their gas in place under their land, as you compute,—is to the entire oil and gas in the entire pool, as you compute it?

A. The answer is "yes", Counsel if you will permit me to state that the rule as you used it is for the purpose of fixing the equity calculation.

Q. But no other compensation has been made them than that?

A. They are going to be compensated by the increased income they will get.

Q. I understand they are entitled to that as a matter of right?

A. Yes.

Q. In the event this pool is not unitized how much or what percentage I will say, of the gas and oil in place will be produced?

A. I would say that about 25 per cent of the oil in place would be produced, about 25 per cent which corresponds roughly to about 24 million barrels, would be the ultimate production by pressure depletion operation and depending upon,——

Q. Is that what the present number of wells would produce, I mean to the development that has been had up to date?

A. The number of wells drilled doesn't effect recovery. It only affects rate of recovery. Unless some conserva-

[fol. 880] tion of the gas-cap gas, some restoration of the gas-cap gas is had, the ultimate recovery may not be as much as 25 per cent of 24 million barrels.

Q. Assuming that the restoration will be the same as it is now, under the present order as made by the Commission?

A. Would be 24 million barrels ultimate recovery or less.

Q. Now, after that 25 per cent has been recovered in what condition in your opinion, will the field be as far as production is concerned, and it's ability to produce either oil or gas by present methods?

A. It will have no ability to produce by present methods.

Q. Either oil or gas?

A. Yes, sir, if I understand your stipulations.

Q. Now then, I will ask you if at that time it wouldn't be possible to use secondary recovery methods and inject gas into the reservoir and thereby produce additional oil?

A. I doubt it very much.

Q. You mean to tell the Commission that if this field is depleted that secondary recovery methods of gas injection and pressure maintenance after it is injected will not result in the production of any more oil?

A. If it could be engaged in, but we have the history of Oklahoma behind us over a few fields. If you will go,—if you are going to have any kind of secondary recovery operation after they have reached the stage of depletion, the evidence is all around us, that we sit over a great pool, [fol. 881] which is evidence of that fact.

Q. Do you mean to tell the Commission that the Oklahoma City pool cannot now produce oil if secondary recovery methods are used such as gas injection and water injection?

A. If it takes as long to bring about that as it has to the Medrano, most of the wells will be plugged and no longer available for that purpose.

Q. Is that the only reason?

A. That is a very substantial reason.

Q. If the wells were not plugged you think secondary recovery methods could be employed in the Oklahoma City field in places where the oil and gas is depleted and additional oil recovered?

A. Additional oil could be recovered, Counsel, but the amount of that recovery would be substantially less than could have been recovered had the Oklahoma City field been unitized and gas injected at the time in its life which we had never proposed. To unitize West Cement Medrano, it having once destroyed the aspect of the field, it is almost impossible to build it back however anxious men might be.

Q. On what scientific fact and experience do you voice that statement?

A. It would take about an hour to explain that but I will be glad to indulge in that if you wish.

Q. I think you should and the Commission would be glad to hear.

A. Evidence of a technical nature in this hearing established the fact that in the Medrano sandstone reservoir [fol. 882] oil occupied in the reservoir was .16 barrels for each corresponding barrel of oil in the stock tank. In other words, that maybe interpreted in this manner, that in the oil saturated zone in the West Cement field about 85 per cent of the pore space filled with oil was actually occupied by crude oil. Going back to the connate water again, 20 per cent filling the pore space and 80 per cent of the pore space that was saturated with petroleum, dissolved gas occupied about 15 per cent of that pore space and the stuff we call crude oil occupied about 85 per cent, so that it takes 1.116 barrels in the ground to produce one barrel in the stock tank, so that for every barrel in the stock tank it takes, there is about 1.116 barrels of gas existing in solution as such.

Q. Just a minute, you get a percentage that doesn't agree with the tables here on the Medrano pool, you show that your gas voided in Section 3 is 23.95, per cent and that your percentage in A is 1.113 per cent in segment "C" 4.48 in segments "D" and "E" no percent.

A. You refer to the time "T" Zero, I am referring to that instance before any production whatever is had.

Q. What time do you have reference to?

A. Before any production from the common source of supply was had.

Q. At that time there was no gas that could get out of solution?

[fol. 883] A. That is right.

Q. You have 15 per cent out of solution.

A. Well Counsel, as that barrel of oil lay in its native state,——

Q. What time do you fix when you had 15 per cent out of solution, are you going to rub that out?

A. I am going to start over and take another hitch at it, in this respect, in order to have a barrel produced in the stock tank in the West Cement Medrano pool under conditions prevailing originally before any production was had,—I make the statement to any subsequent time, there was necessary to produce from the reservoir here that the stock tank barrel represents a barrel of crude oil but it also represents in the reservoir compensation with it of .116 barrels of dissolved gas. So framing in your mind a barrel of petroleum in the Medrano reservoir under original conditions and looking at it with deep preception, you see that 15 per cent of what appears to be liquid is actually just dissolved gas, just a wind and 85 per cent of that original petroleum in the ground is the solid substance called crude oil, which I call stock tank oil. Now, if all the gas were bled off of the Medrano pool, I assume we can take that as an assumption, it would be possible to do it, if all the gas were bled off, as an assumption, the petroleum that is filling the pore space, the liquid would shrink, it would shrink to a value of only 85 per cent by just bleeding off the gas, it would therefore be possible to reduce saturation or liquid in the sand to an extent of [fol. 884] 15 per cent, so if we were to look at the pore space no crude oil has been produced, all the gas has been bled off and there is a vacancy of 15 per cent under those conditions, there is space containing nothing.

Q. You don't think that condition actually exists, what is the purpose of going into the thing theoretically?

A. All I pray for is patience. If all the gas were bled off, no crude oil whatever produced the liquid saturation of the sand would shrink to 85 per cent of its value. Now, if, as you set forth, we bought a lot of gas to put it back in the ground and we attempted to recover the oil unfortunately that gas that we reinject would not dissolve in that oil, time would not be sufficient to permit that process.

Q. What pressure would have to be put on that gas to put it in solution?

A. You could put on whatever amount you want.

Q. I say how much pressure does it require to put natural gas in solution?

A. It would take no more than was originally but you have a solution process that is involved. Now in order to dissolve sugar in coffee, you stir it. You cannot stir crude oil because it is in the deep recesses of the rock, so the gas is injected and it cannot wait, the pore space is now partially voided, the result is some of the gas finds its way back into the rock and doesn't produce anything, [fol. 885] much of the gas you put into the reservoir doesn't have an opportunity to recover oil. The recovery process after a pool is depleted is substantially less efficient because of the void space you create by the act of driving of that gas, there is only one way to efficiently operate an oil field to get the ultimate in conservation and that is to take that field in its native condition when the pore space is still filled with reservoir liquid and the gas is already there and from that very day of first production put back the produced gas and in that way overcome the shrinkage of the oil and maintain the engine and the machine at this high state of efficiency. You can go to the Oklahoma City field today and recover some oil but the amount you recover today is substantially less than what you would have recovered had we operated that pool at the beginning,—that is the reason,——

Q. What percent of the total is left?

A. In Oklahoma City?

Q. Yes.

A. In Oklahoma City, if my memory serves me right, one billion, one hundred billion barrels in the pool to begin with, a billion and one tenth, and the recovery to date, and taking general figures, about four hundred fifty million barrels, there rests beneath us in the Oklahoma City field today a residue of six hundred and fifty million barrels of crude oil, that in my opinion will never be made available to the State. Had this Wilcox been unitized from the beginning the recovery would not have been [fol. 886] four hundred and fifty million, leaving six hun-

dred and fifty million in the ground but recovery would have been eight hundred million, leaving three hundred million in the ground. That is what unitization and pressure maintenance means in the life of a field in this State.

By Commissioner Jones: That gas that you say after the field is depleted and the oil is still there, any gas put back down there, it doesn't have any effect?

A. Yes, sir, it doesn't swell the oil back up.

By Mr. Jones:

Q. Why it would be any different if you started before the field was ever produced?

A. Before the oil was produced the gas is already there in solution. It hasn't had a chance to get out so that the pore space is completely filled up with the oil and the gas in solution,—but you drill a well in that condition and put the gas back in the reservoir immediately you maintain the pressure at a high level. I think I could answer your question in this way,—To use the same approximate figure, the Medrano pool had a pressure of 2130 pounds to begin with that is before any production. At the present point where the production is fixed by millions of barrels of oil or approximately there, the pressure has fallen about half, or about 1075,—so over here (indicating) the pressure has declined in this manner, there was 97 million barrels of oil in the pool to begin with and six million barrels have been produced and there remains approximately [fol. 887] 91 million barrels. Now the 91 million barrels that remain there today, those barrels have been subjected to a loss of gas by this pressure gas, that gas has come out of solution and the oil has shrunk down and the sand is less saturated. Now had we been able to inject gas from the beginning of first production we could have carried the reservoir pressure along the dotted line like this (indicating) we might have been able to maintain at its original value. Had we done that, kept the pressure at 2000 pounds then the 91 million barrels remaining would be more easily recoverable, the sand would be more saturated. At a thousand pounds some of this 91 million barrels would shrink

down,—had we kept it up about 2000 the shrinkage would be small and the oil more recoverable.

Q. Are you able to say to the Commission that no part of this six hundred fifty million barrels of oil that is left under Oklahoma City can be produced by secondary recovery methods?

A. I didn't say that to the Commission.

Q. What percentage of that amount in your opinion can be produced?

A. Six hundred and fifty million barrels lying in Oklahoma City that can be recoverable now?

Q. Yes.

A. I don't know whether you take into consideration the rate of wells abandoned,—at the present rate of well abandonment none of it will be, because the field will be non-existant.

Q. Let us assume that the wells will not be abandoned, no [fol. 888] more than now, how much do you recover?

A. Well, I would say any number from 50 to 100 million might represent the recovery that still could be had if it were possible to jump in now and unitize the field.

Q. You think that would be profitable?

A. I think so, yes, sir.

Q. Now I will ask you if the South Burbank pool isn't an example of unitized operations and pressure recovery methods?

A. It is a paramount example.

Q. That is the best one you have?

A. Almost.

Q. I will ask you if that type of recovery was not commenced at the inception of the pool?

A. Yes, sir, in 19.

Q. What spacing did you have in that pool?

A. One well in 20 acres.

Q. There is one well drilled to every 20 acres?

A. Yes, sir.

Q. Now has pressure performance recycling operations, is that correct?

A. Yes, sir.

Q. And the pool has been operated in that manner since

oil was first discovered and is still operated in that manner, that is correct?

A. Yes, sir.

Q. Then I will ask you if the Burbank pool, North Burbank pool that is rather similar in its formation and [fol. 889] structure to the South Burbank pool?

A. It is identical with it except with respect to areal extent.

Q. There are some people who disagree with you?

A. Some geologists and scientists on the identi-al proposition.

Q. You could find some——

A. Yes, sir.

Q. At any rate you agree they are similar in their structure?

A. I say they are.

Q. I will ask you if it isn't a fact that the North Burbank pool produced oil without any sort of pressure maintenance or gas injection for a number of years?

A. It did that for about twenty years.

Q. It was developed on 10 acres spacing plan?

A. Yes, sir.

Q. Now I will ask you if it isn't a fact more than ten years after the field was discovered that repressuring and recycling operations were commenced, secondary methods?

A. In the North Burbank po[illegible]

Q. Yes.

A. The first production in the North Burbank was about 1922, ten years later in which you refer, 1932 there was a very *very* moderate — to inject gas, gas injection did not occur to any extent until about 1942.

Q. That was twenty years,—I will ask you if that operation is not being continued at the present time?

[fol. 890] A. It is with the view of water-flooding the field very shortly.

Q. I will ask you if that operation has not been profitable?

A. It has been.

Q. So that would you say that secondary recovery methods applied after the field has been depleted are practical and will produce it profitably?

A. Of course, I could answer that question Yes, in answering directly "yes" would you permit me to misquote Mr. Bond?

Q. Yes, if you give me that percentage you give to the Commission?

A. I would be glad to give it to you now, the outstanding facts about North and South Burbank are these facts,—when the Burbank pool was first drilled, first produced in 1922 gas was first injected in a moderate extent in 1932 and finally in 1942 extensive gas injection program was engaged in in the North Burbank. The recovery from North Burbank to this date is in twenty years, in round numbers about 9000 barrels to the acre.

By Mr. Williams:

Q. When you say twenty years, you refer to 42 or the present time?

A. In 1947, twenty-five years, the recovery from North Burbank has been about 9000 barrels per acre. You take that and compare it to this,—in 1935 first production from the South Burbank, in 1947, the recovery, all other things being equal, is 9000 barrels to the acre. The North Burbank,—the South Burbank producing twelve years under unitized gas injection from the beginning as much oil per [fol. 891] acre, in a reservoir, that is its twin, as did North Burbank operating in the old competitive manner, pressure depletion, in twenty-five years. The well spacing in North Burbank was one well to ten acres. In South Burbank the wells were drilled one to twenty and then part of those wells were used for gas input. So the actual producing space was one well to thirty acres. This proves well spacing has nothing to do with oil recovery. The thing that developes oil recovery is how the field is operated. The South Burbank was operated efficiently. Gas was injected from the beginning. It had almost three times the producing well space as had North Burbank, yet it recovered just as much as oil in half of the time and the story goes on. North Burbank is about washed up, it is about finished. The operators at the present time are meeting with independent agencies for the purpose of water-flood-

ing, trying to clean out the last bit of oil and South Burbank has another 7500 barrels per acre to go. There is another 7500 barrels per acre to come. There will be about 1.85 times as much oil from South Burbank as there will be from North Burbank and then South Burbank can be water-flooded to beat that, even so we may increase by water-flooding in North Burbank. That is what unitized gas injection maintenance in the light of the field means. It means clearly twice as much oil can be had.

Q. At the present time both fields have produced the same amount of oil?

[fol. 892] A. In barrels ~~per acre,~~ yes, sir.

Q. In both fields are continuing to produce oil?

A. North Burbank had a very low rate, North Burbank was a relatively low rate, South Burbank was a relatively high rate.

Q. And the operators are not thinking about shutting down?

A. Yes, sir, they are thinking of shutting down gas injection and engaging in water-flooding.

Q. That means they are going to operate the field?

A. Yes, sir.

Q. They are thinking about operating the field and continuing the use of secondary recovery methods?

A. That is true, yes, sir.

Q. As far as you know ultimately North Burbank may produce as many barrels per acre as South Burbank?

A. I know it won't.

Q. That is your opinion?

A. Yes, sir.

Q. But you do not purport to know what is going to happen?

A. I think I am pretty confident of my conclusion in the matter.

Q. If the Commission please that is all I have to ask the witness at this time.

[fol. 893] May 21, 1947, at 10 o'clock a. m.

[fol. 894] Chairman Bond: Gentlemen, are you ready to proceed in CD 1308?

Yes, Your Honors.

Mr. Kaveler returns to the stand.

Reford Bond, Jr., examines the Witness:

Q. You are the same Mr. Kaveler that was on the Stand when the Commission last adjourned?

A. Yes, sir.

Q. Mr. Kaveler, do your records show the number of barrels of oil per surface acre over the oil sand in the West Medrano pool in which you estimate all that will be recovered under present methods of production?

A. On pool average basis?

Q. Yes, on oil sand basis that is, that it is figured, that it will be comparable to the figure on the north Burbank, on the per barrel recovered.

[fol. 895] A. Mr. Bond's inquiry can be answered by reading from the report of the Engineering sub-committee which made a study of this pool, which report states, "areal extent of the pool is 1300 acres for the oil zone and 1908 acres for the gas zone",—1300 acres at approximately 18,500 barrels per acre makes approximately 24 million barrels——

Q. Now, under the Unitization method how many additional barrels of oil do you expect to recover from the Medrano?

A. In my opinion at least 18,500 barrels per acre, if you wish to express it in those terms.

Q. In computing the division between the oil and gas you estimate recovery at 35%?

A. 35½%.

Q. And you believe that the total recovery under Unitization will be what?

A. In my opinion it wouldn't be unreasonable to believe that it might be as high as 20 per cent but that doesn't necessarily imply——

Q. Well, at the time the oil was first discovered in the Medrano pool, what was the capacity of the pool estimated to be?

A. 97,000,000 barrels.

Q. Are you qualified to testify on the cost of this operation you propose?

A. Yes,—I don't have the figures you might desire, but I can testify in generalities.

[fol. 896] Q. Can you give us figures, in round numbers, substantially correct?

A. I think so.

Q. Does that matter come under your supervision with reference to the compilation of these figures?

A. Yes, it does.

Q. You are familiar with the facts and figures?

A. Reasonably so, yes.

Q. What is the cost of drilling a well in the Medrano oil sand?

A. At the present time the cost of drilling a well, I would say $65,000.00 to $70,000.00.

Q. What is the average cost of wells that are already drilled?

A. We compiled a drilling cost table and it varies, depending upon when the well was drilled in the intervening ten or twelve year period of operations there. During the war they were high and at other periods they were comparatively low.

Q. What is the average lifting cost of the recoverable oil in the Medrano pool?

A. At present it varies between 15 and 20 cents per barrel.

Q. What will be the ultimate average lifting cost?

A. Well, if the oil stays at $2.00 per barrel the cost will be higher, but if it falls to a $1.00 it will be lower.

Q. What, in your opinion, would be the average lifting cost per barrel if produced under the present methods?

[fol. 897] A. I will interpret your question as applying to 24 million barrels and I estimate it would run about 35¢ per barrel at the present price of oil.

Q. Now, what, in your opinion, was the average lifting cost per barrel of 48,000,000 barrels of oil expected to be recoverable under Unitization of operations?

A. From five to ten cents (5¢ to 10¢) more per barrel than I have given you.

Q. The cost per barrel would be greater under the Unitization Plan, what would be the cost of lifting the oil——

A. Now, I have difficulty in answering, because I don't know what you mean.

Q. The question is what would be the average lifting cost per barrel?

A. Well, you say recoverable oil,—the oil that remains in the ground is not recoverable.

Q. What is the lifting cost of the recoverable oil that remains in the ground, under Unit operations?

A. Do you mean to refer to the cost of lifting 24,000,000 barrels?

Q. No, I don't mean to refer to the cost of lifting 24,000,000 barrels,—I mean what would be the lifting cost of the recoverable oil that remains in the ground, under Unit operation?

A. That's 24,000,000 barrels——

Q. Not the increased recovery but——

[fol. 898] A. Well, I have answered that, I told you it would be 5¢ to 10¢ more per barrel than the increase,—more than the figures I cited.

Q. That the cost of lifting the oil that would be recovered under Unit operations would be in the neighborhood of 50¢ or 60¢?

A. Yes,—you understand I am giving maximum figures.

Q. Then I understand it would be 5¢ more per barrel for lifting the recoverable oil that remains in the ground, under Unit operations?

A. 5¢ to 10¢, yes.

Q. Now, what, in your opinion, would be the lifting cost, that is the average lifting cost, I'll say, of all oil that must be produced from the Medrano pool under present methods and following that with the ordinary and customarily used methods of gas repressuring and water-mudding?

A. Well, if the pool were to be depleted and rid of all gas, the cost of production could be very great, considering the expense of buying gas and other expenses necessary to the operations,—this is a deep pool and under the conditions named the cost of the production of oil would be very substantially increased.

Q. Why is it that it is so much more expensive to apply secondary recovery to deep pools than to shallow pools?

A. For the reason that the amount of gas necessary is [fol. 899] greater and the general operations are greater.

Q. Then it resolves itself down to the matter of the purchase of gas with which to repressure?

A. Well, yes, and then it resolves itself into other problems after they reach depletion to the extent you suggest.

Q. What does it cost to drill a well in the North Burbank pool?

A. Well, the productive sand is about 2900 feet,—at the present time my estimate is about $32,000.00.

Q. Can you tell us the average lifting cost of oil in the North Burbank field after the field has been completely depleted?

A. Well, the cost,—if you'll tell me what the price of oil will be, what the surface damages will be that will have to be paid I will attempt to answer your question.

Q. Well, use the figures that you Engineers use.

A. Well, I have given you those figures and that is as far as it is necessary to go,—you are asking me to divine the future.

Q. Now, I'll ask you if it isn't a fact that the Engineers working on the North Burbank field estimate that the oil recovery, that they will recover an additional 10,000 barrels per acre,—I'll ask you if it isn't a fact that the engineers who are operating the North Burbank pool do not estimate that there will be a future recovery from the North Burbank pool of 10,000 barrels of oil per acre after present recovery methods now being used are completed, after that operation is completed?

[fol. 900] A. Now, I interpret Counsels question to inquire if ultimately, if the ultimate recovery in that pool will total 10,000 barrels per acre.

Q. I am asking you what the Engineers say about it, the Engineers who are operating it?

A. Water-flooding the North Burbank pool——

Q. Well, answer the question, do you know what the Engineers say about it?

A. I know what one engineer says about it.

Q. Do you know whether any of them will say 10,000?

A. Well, the North Burbank will yield under water-flooding *and* extra 10,000 barrels per acre,—Mr. Commis-

sioner, the North Burbank field is 2900 feet deep. The North Burbank will yield 9000 or 10,000 barrels and under water pressure it will yield 22 to 23 per cent additional, this water-flooding will make another 10,000 barrels per acre, but even so we get twice as much oil we still will have recovery of only about 46 per cent of the oil. That field was Unitized early in its life.

Vice-Chairman Weems: Is what is called the South Burbank field the same as the North Burbank?

A. Yes, they are identical, except in depth,—the North Burbank is six times as large in area as the South Burbank, but otherwise the two pools are identical.

[fol. 901] By Mr. Reford Bond, Jr.:

Mr. Witness you have testified that the cost of lifting the oil under Unit operation, that is the average overall lifting cost of the oil under Unit operation and primary operation as it has gone at the present time at the West Cement Medrano pool would be more per barrel than the average per barrel lifting cost of oil under the present recovery methods supplemented by secondary recovery methods, that is true isn't it?

A. Mr. Bond,——

Q. Wait a minute, you said about 5c per barrel I'm not through with my question, if the average lifting cost under Unit operations in West Medrano,—now then you come to the Burbank pool and you say that the lifting cost in the South Burbank pool which is a unitized operation from the beginning is less than the average lifting cost for the oil in the North Burbank pool which was operated under present methods used in the Medrano pool for a number of years and then later changed to secondary recovery methods, now will you explain that difference to the Commission?

A. The difference Mr. Commissioner rises from this fact, South Burbank pool was discovered in June 1935 and was unitized July 1st, 1935 or thereabouts. There was hardly any gas vented into the air. Under the influence of an independent agency, which was solely royalty owners, the operators were called to meet together and gas was put back into the pool from the beginning. Now, the situa-

tion was entirely in North Burbank, in the North Burbank [fol. 902] it was the Deveil take care, the only concern anybody had, if anybody could buy storage big enough to take the oil,—gas was vented, 80 per cent of the gas in the North Burbank was vented into the air. They were following the then accepted practices of the industry. When the operators got around to the North Burbank they realized that was a mistake and they sought to use force of gas and there was no gas. One company advances $300,000.00, said take this money and build us a gas line eighteen miles to bring gas into the field and after the gas got there the gas was sold for 3¼¢ a thousand but the pressure to inject every foot of that gas was put back into the North Burbank cost the operators 8½¢ a thousand. The operating costs, lifting costs of the North Burbank pool were substantially high, for two reasons, the first, the high cost that the operators suffered in putting back the gas that they selfishly wasted. In South Burbank there wasn't that much, because of all gas was put in the field. The operating cost in North Burbank was high because the pool was allowed to shrink, the oil saturation was allowed to shrink, due to the r-lease of pressure and when they finally bought the gas to restore, and they put it back in the sand, the recovery operation was less efficient that South Burbank where the pressure was maintained and the oil was maintained almost at its initial condition. So the difference in cost is obvious when one considers those two basic aspects of it.

Q. Now then, do you want to change your testimony and say that the cost of lifting oil in the Medrano pool under [fol. 903] secondary recovery methods if they were used, would be more than the cost of lifting the remaining oil under Unitized measure?

A. I cannot answer that question, because there is some indefiniteness to the use of the word "secondary recovery". If you mean that secondary recovery that the Medrano pool should be allowed to be depleted by venting off the gas and then an attempt be made to engage in water flooding or gas injection I would like to answer your question.

Q. I want you to be able to answer it, therefore, I want to clarify your answer a little bit, by inserting this, that

the gas be vented according to the order is now in force by the Corporation Commission, that is under the order of the Corporation Commission?

A. In any event, the gas will leave the field, it will not be injected in the ground.

Q. It would make a difference whether it left there fast or leaves now under the Commission's order, it would make some difference. In any event the end result is what are interested in. If the gas is taken out of the reservoir and transported to Kansas City and Chicago as sold, it is no longer available for production of crude oil. You asked me if that happens and the pool reaches the depleted state, whether or not I wish to change my estimate of the cost of oil that would be incurred in an attempt beyond that point.

Q. No, the average lifting cost per barrel of oil if the field is produced under present methods to the point of [fol. 904] exhaustion and then secondary recovery methods are applied.

A. The lifting cost in the Medrano pool in that event would be substantially high, just as it were in North Burbank for the reason you have the North Burbank all over again.

Q. How much more than 50 to 60¢ per barrel for the average from now until the field is finally depleted?

A. I answered previously by stating my opinion, twice as much, depending on economic conditions.

Q. Twice as much what?

A. 50 to 60¢ a barrel.

Q. Is that the average lifting cost at the present time until final depletion, or from the time of depletion under present methods to the time of final depletion under secondary recovery methods?

A. I attempted to answer the question in respect to what the cost would be if oil, for oil recovery in the secondary recovery operations which you stipulate, to buy back the gas, to attempt to operate the reservoir in its then state of depletion, wouldn't my opinion involve production costs which would be an average of $1.00 per barrel or the reserve that could then be had.

Q. Now I will ask you if the operations in the North Burbank pool is a profitable --- to the operator?

A. You mean at the present time.

Q. Yes, and over all.

[fol. 905] A. It is reaching the economic limit by operation at the present time, if the present number,——

Q. Would you say that it is or is not profitable?

A. This day, it is profitable, but it is approaching a state of unprofitableness.

Q. And after the next 10,000 barrels per acres produced it will be unprofitable?

A. That is substantially true, yes, sir.

Q. But the next 10,000 barrels per acres that are recovered will be recovered at a profit to the operators?

A. I assume Counsel is referring to the next 10,000 barrels not in terms of the present operations but in the terms of water-flooding operations.

Q. Whatever they propose?

A. The next 10,000 barrels to which you refer will be water-flooded oil and that can be had at a profit.

Q. Now then, I will ask you whether or not oil in the South Burbank pool is being now produced at a profit to the operator?

A. Yes, sir.

Q. In the future oil that you estimate will be produced under present methods will also be produced at a profit to the operator will it not?

A. Yes, sir.

Q. You estimate, I believe, that the future recovery from the South Burbank pool would probably be 7500 barrels per acre?

A. Additional, yes, sir.

[fol. 906] Q. Additional?

A. Yes, sir.

Q. Now I will ask you if it is not a fact, that wells could be drilled and can be drilled in the West Medrano oil zone on 20 acre spacing and the operation and production of the oil and gas be profitable to the operator?

A. I think that the operators could possibly make a profit after such drilling, but that would not share the maximum recovery of oil from the pool, nor would that

excessive investment lay a predicate for conservative practices.

Q. Isn't it a fact that the more wells you drill to a sand that the greater production you will expect per acre?

A. General terms, that is true if the oil sand were mined, it would make an infinite number of wells in the field, then recovery could be had in maximum volume. That answer ut-erly disregards the economic consequence of such drilling.

Q. Are you familiar with the petroleum production engineering by Uren published by the Book Company, Incorporated 1946?

A. I know of such book, Counsel.

Q. Is that or not a working text book which is used and recognized in engineering schools of geology?

A. Well it may be, sir.

Q. Well do you know?

A. I suppose there is some school which uses that book, yes, sir.

Q. But you are not familiar with the book?

[fol. 907] A. I haven't read it because the devil can quote scriptures and I would be afraid of what is in there.

Q. You admit you haven't read this text book?

A. I have glanced through it, and I find such violent expression and conclusions that I did not proceed with my reading.

Q. You have glanced through it?

A. Yes.

Q. And you glanced through it sufficiently to be familiar with its contents?

A. I have a general idea what is in there, I would be glad to read from it if you wish.

Q. Well, I would be glad to have you read from it, will you read page 80, the part that is underlined, to the Commission?

A. I read from the book to which Counsel referred, on page 80 thereof the sentence underscored in pencil wherein the author states "The different recoveries secured by different spacing of wells in the Long Beach field of California, also shows that close spacing of wells is in every case productive of the greater per acre recovery, though

the greatest production per well has invariably been obtained by wide spacing" which is the end of the text.

Q. Now, that in your opinion, as an Engineer, is true?

A The statement is true, but it provides a very shallow and narrow basis for the predicate to which you appear to be laying.

Q. Assuming that you had a well drilled in the West Medrano oil pool on each 40 acres overlying the pool and had the information which you would naturally obtain [fol. 908] from the drilling of such wells to the Medrano sand, I will ask if it isn't a fact that you could approach a more equitable division of the oil and gas in the reservoir between the persons entitled thereto in case of unitization, then you could if the wells drilled in an irregular pattern in the same manner as they are now drilled.

A. The question which Counsel now places before me involves a matter which has been repeatedly referred to in this hearing. In a narrow sense the answer to Counsel's question is "yes", that the more wells that are drilled naturally the more one finds out about the particular common source of supply and in the ultimate if we strip off the earth it gets down in the mine and examines this thing with a great ultimate detail we might be able to say, with proving finality, we have examined every sand grain and we think we now have sufficient information to unitize this pool. The testimony doesn't in this case doesn't go that far because it would be utterly impossible and impractical to attempt a microscopic examination of all the things that might occur to our mine during the examination in this desire to be equitable in the ultimate degree. But there has been 55 producing wells drilled, some 87 wells drilled in the general area of the field,—cores have been taken from 21 wells, and a ten year history of the field is obtained, pressure area is available, there has been a substantial inquiry into the characteristics of the sand and Counsel's question in my mind poses a question where [fol. 909] is the point of reasonableness where you shall stop and say for all practical purposes within the realm of acknowledgement we have obtained sufficient information. It is my opinion that the drilling of a great many more wells or a few wells in this field will not contribute

information which would in any way affect the conclusions herein reached or contained in the application. Counsel's question goes to this point, to the layman there appears to be a substantial variation in the information had from one well as obtained from another. For the example, the Pell No. 1 Core Analysis was held up to the closest point but that the porosity in the Pell No. 1 was 13.3 and the porosity in some adjacent wells in the tracts was some other figure however higher or lower. Now these are variations as between tracts, and it is impossible to pursue by drilling for other means to get down and shear off foot by foot or inch by inch the variation, so from an engineering and from an equitable point of view you face a problem here that you face in any other comparable situation, one must make enough observation to reach the point where it can be said with some reasonableness we have sufficient information for this theory. The average condition does not develop at any time in this hearing. The average condition does not develop substantially from the observation that is defined of an average. An average that approaches all of the values to a reasonable extent. So that my answer to the Counsel's question is that additional drilling in this field will not substantially or to an significant extent alter the [fol. 910] picture of the reservoir which was here presented by the Applicants in this case.

By Commissioner Weems: These 21 wells you speak of are they just wells scattered over the field?

A. Yes, sir, they were drilled from one end of the field to the other,—this is Exhibit 55, and is the structure map of the pool in the Medrano wells are all indicated, Mr. Commissioner, by circles around them,—circled with the solid dot inside is an oil well and the circle with a little specks or spikes are gas wells, every tract has a well drilled on it except for the very small tracts on the West end, except for the Dome-Bo tract, which had the plugged well. That tract has a well, here, (indicating) here, and here, three of them, here is another one (indicating), here is two (indicating),—55.

By Mr. Reford Bond, Jr.:

Q. What about the McClaren lease, will you call the Commissions' attention to the McClaren lease, they have no wells?

A. I have done that,—so 55 wells inside of the boundary of the unit, some 12 on the outside as I remember, or was it 20, so altogether about 70 or 80 wells drilled that defines this pool. They are all scattered over the field.

Q. Now, I will ask you if a well drilled to each 20 acres in the Medrano pool would be an operation development at a profit to the operator.

A. The answer to that Counsel, is yes and no. It would depend where the well is drilled. If the well were drilled in [fol. 911] the middle and the oil hadn't gone down structure from it and the operator could rely on capturing somebody else's oil by engaging,—in reliance on a high potential with the development, he might make it quite profitable. In my opinion, 20 acre spacing would be an economical waste in that field because it would put a burden on the investment already on the operator, and it would be better in the main to follow more conservative practices. Money could be made, yes, but that doesn't mean anything. What kind of money could be made? It is money to be made at the expense of the royalty owners and if that is the kind of money we want to make let us have at it.

Q. You have admitted more oil could be recovered by 20 acre spacing, you agreed with the text book on that?

A. Insofar as the text book is concerned that statement in its generality cannot be contested.

Q. You also agreed that if wells were drilled one to a 20 acre unit that the cost would be recovered at a reasonable profit obtained by the operators?

A. At the expense of the ultimate recovery.

Q. There would be no expense with ultimate recovery, if the pool were unitized or operated under a Unit?

A. There would be no competition between operators, there would be no attempt to cut each other's throat.

Q. You would get greater recovery from 20 acre spacing than you would as it is now spaced?

A. Under unit operations?

[fol. 912] Q. Yes, sir.

A. No, sir.

Q. That isn't true?

A. No, sir.

Q. Do you have any text book authority for that?

A. I will serve as a text book authority.

Q. Do you have any actual experience as to that proposition?

A. Yes.

Q. What field and where?

A. Counsel, that gives me a splendid opportunity to,—and I thank you for that. Mr. Commissioners the Schuler field in Arkansas. Some gentlemen referred to it as the Schuler-Jones field, was discovered in the year 1937 in September. That pool is 7500 feet deep. The pool is operated competitively, until the year 1941 in February. The original reservoir pressure in the Jones sand pool was 3520 pounds per sq. inch. In the four years of competitive operation on 20 acre spacing, the recoverable oil was 116 million barrels, 1941, 16 million barrels, there was in the pool to begin with 116 million barrels,—so that the Jones pool is in many respect- similar to the Medrano. The Medrano had 97 million barrels in the ground to begin with and the Jones in Arkansas had a 116. By the time 16 million barrels were recovered the reservoir pressure had fallen to a value of 1500 pounds per square inch and one can look at that set of figures and say this to themselves, "Is it not true that half of the gas, 50% of the gas has been dissipated, gone, and about 7 per cent of the oil [fol. 913] had been recovered, 50 per cent of natures energy dissipated."

Q. How does that compare with the segment "D" of Medrano pool?

A. To date, comparable, as I recall the figure only 7 per cent of the oil was recovered, obviously the pool was not being operated in a very efficient manner and the consequence of that was that the pool was unitized.

Q. What was the spacing in the Schuler?

A. 20 acres, competitive operation, the pool was unitized in 1941.

Q. In your segment "B" of the Medrano you certainly don't have 20 acre spacing.

A. May I finish the answer. Mr. Commissioners in 1941 when the pool was uniti-ed, 72 leases became one lease and 26 operators became partners in the Unit as of this date. In 1947 Mr. Commissioners, the Jones sand pool still has a pressure of 1500 pounds. The pressure hasn't been permitted to decline because all the gas produced and a little bit more has been returned to the Jones sand, 1500 pounds, and the recovery to this date is approximately 40 million barrels, 40 million barrels which is about one third, thrity-three and one-third per cent has been recovered to date on an Exhibit which will show you in a few minutes. It will be clear that the prospect, that there is yet another 40 million barrels will be recovered. The Jones sand pool is now going to yield two-thirds of the oil in place whereas prospectively it was going to yield only [fol. 914] about one-third. We are going to get twice as much recovery from the Jones sand as a result of unitized gas injection than otherwise can be had. I believe I have said,——

Q. Now Mr. Witness, will you go ahead and show what this has to do with a Unit spacing, that is what you started out to talk about, you were going to show the Commission that 20 acre unit spacing would not produce any more oil in the very irregular spacing that you now have in the Medrano pool, so far you haven't cited anything of the Schule- pool that touches it side top or bottom except that it is 20 acre spaced pool.

A. I will touch on that too. I thought I had the Exhibit with me. I don't have. I can reproduce the essentials on the blackboard by drawing a graph. One side of which is represented pressure, the other side is represented recovery. I place on the left hand side of the graph the figure 3520 which was the original pressure and the point 1500 pounds to which the reservoir pressure had fallen at the time the recovery was 16 million barrels. I draw a line which shows sharply the decline in reservoir pressure from the initial condition and down to where it was additionally 16 million,—one reason why the reservoir pressure fell so rapidly you lost 1500 pounds, one reason that the

Jones sand originally had 750,000 cubic feet per barrel of oil. So the first few days of production the oil was produced with a gas-oil ratio of 752.1. Now Medrano would be about 447 cubic feet per barrel,—then as it happened in all oil fields, as it will happen in all oil fields under [fol. 915] pressure depletion practices, the gas-oil ratio continues to grow, to get large and at the time 16 million barrels of oil was recovered, the gas-oil ration had increased to about 2800 cubic feet per barrel,—in other words, in February 1941 it took the gas from about four barrels of oil to produce one barrel. The gas was being vented rapidly into the air and the pressure was declining. Now there is a means of estimating the future of a pool which has had this much history and the future of the pool was such that if you extend these curves it would indicate a recovery ultimately of about 35 million barrels. In other words, you can see by the time 35 million barrels have been recovered under those conditions the pressure would be gone, the gas would be gone and the pool would no longer produce. The rapid pressure decline was due to the fact that this gas-oil ration would go up, reach a high maximum figure until the gas was exhausted and then the pressure would blow off and when the last barrel was recovered under pressure the depletion operations, the gas pressure was practically zero. What happened? The pool was unitized on the 15th of February 1941 and at 7:00 o'clock of the 16th of February 12 hours later the oil was taken from that pool with a reduced oil-gas ration and a barrel of oil was produced with a ratio of 1400 cubic feet per barrel. Why? There was 145 wells in the Jones sand pool and on the morning of unitization 100 were closed and the daily production on the 15th of February was taken from only 50 wells, and closing 100 wells that [fol. 916] were producing oil wastefully and took the oil from only one-third, that proves again that well spacing has nothing to do with ultimate recovery. It is a method of operating the pool that determines how much oil should be recovered. In February 1941 to July 1941 some three or four months later a compressor plant had been built and the results of the operation of the compressor plant

is that the oil is produced from the Jones sand, that area there is no vented gas, all the gas is put back into the ground and as a result of the pressure, of that pressure has been maintained at about 1500 pounds beginning February 1941 and extending to this date which is May 1947.

[fol. 917] (Reporter's Note: Continuing the answer from previous page.)

A. Six years and the recovery is to this date 440 million barrels and it's already more than normally expected and our view is to expect that this condition will continue, that there are 80 million barrels. There will be at least 40 million barrels more obtained from the discovery to 1947, that is four years from the date of the unitization, as the present, is approximately six years. From 1941 to 1947—that is approximately six years.

Mr. Brown: You meant from date of unitization?

A. Yes, sir, 1941 to 1947, we have produced in six years' unitized operation, 24 million barrels which is as much oil proportionately as in the days of wide-open flow, the reason is that the unitization of the Jones Sand Pool is permitted production to maintain at a high level, the one thing is to shoot in the well and unfortunately, to maintain is to produce, and we produced 8,000 barrels of oil per day. In 1941, it was producing about 7,000 barrels of oil a day, we all know that they became flush and did decline, here is a pool that the condition of the opportunity and it is 8,000 barrels through the years. If the pressure depletion is zero and it fell down to these values and it would be that already, the Jones sand would not produce 8,000, but 3,000 barrels a day. Unitization has done two things for the people in that field. It has doubled the lease oil in that field and accelerated and maintained the high rate [fol. 918] of income for the royalty owners. There is not much difference in the S-haler field and the Cement Medrano sand. The only difference is that it's more favorable than the condition in the Schuler, the reason for it is that the Jones sand in Arkansas has a small dome and a shape-like vat. (Indicating—drawing on the board a half circle, drawing the top half) And the location of the top of the water level was 0 feet and all the oil produced is being

injected in the six wells right in the top of that structure and the gas is filling up that structure and it is producing around the rim and we just have 80 feet of working distance and many people say that that project will be a failure. There is not enough production there where you inject gas. Now, imagine that it has 145 wells drilled over that structure and 20 acres spacing and the unitization shuts 100 of them in and the daily operation takes some 50 wells around the rim, the gas is being taken in the top like teacup, West Cement offers more favorable conditions, West Cement has one of the most sharp deep structures known. There are more than 200 feet in the condition between the type of the structure and water level, now it's almost known, as a layman understands, the more you want to get out of something, you get on top and push it down, then you squeeze more out. Now the Jones sand is a 80 foot and it has 200 feet and if we put gas in that structure in the high pitch roof and the gas will move [fol. 919] further in there and we can produce wells in respect to the structure and that oil will all go down hill and that deep structure will be like turning an oil can upside down, it can't fill, and to stand here and say that it will be twice as much oil, it will do that.

Q. Now, Mr. Witness, you still have not shown in any way how that 20 acre spacing will produce more or less oil than the type spacing you have in the area in Cement.

Mr. Williams: Under unitization, the spacing is not signi-cant in unitization for the reason to just drill wells in some pattern over the field, wells must be drilled——

Q. You were going to recite a field, a definite example that a 20 acre spacing would not produce more oil under the unitization than the Medrano.

A. In the Jones-Schuler there are 145 wells drilled on 20 acre spacing, there are 2900 acres in the pool that has the pressure depletion method of operation, after the field was unitized, 100 wells were shut in.

Q. But, where were they in the gas cap?

A. In the gas cap?

Q. They were in the gas cap?

A. In the gas cap and points intermediate, in the points between the gas cap and oil level.

[fol. 920] Q. Points between?

A. Positions intermediate between the gas cap and oil-water contact, those wells were shut in, the same oil was had from 50 and was 145, I ask you now what it was, 2900, we will call it 3000 for easy arithmetic, divided by 50 gives one well to 60 acres on the average, that is one to 60 acres.

Q. What is the distance between wells in 20 acre spacing?

A. That depends on how you drill them.

Q. On the regular pattern that you used in the Schuler-Jones field.

A. 330 from the line from one corner and 330 from the line from the opposite corner, about 1360 feet on diagonal spacing.

Q. What is the difference in the wells producing oil in the Schuler field?

A. Between some of them is three miles.

Q. I mean adjacent wells in the field, you know what I am talking about.

A. I would not confess my ignorance if I didn't.

Q. That are now producing oil.

A. On the average of 2,000 or 3,000 feet.

Q. Adjacent wells?

A. Yes, 60 acre spacing.

Q. You mean to tell this Commission that the average distance between adjacent wells is they are producing two [fol. 921] or three thousand feet?

A. You said producing, or wells.

Q. I am talking about wells producing in the Schuler-Jones field.

A. You can imagine that there are 145 wells.

Q. I don't want to imagine.

A. Attempt to picture 145 wells on 40 acre spacing, take the gas, in those wells shutting down approximately 100 wells, with 45 or 50 producing wells located on the old locations——

Q. What is the distance of the wells that you have located and drawn structures around?

A. It varies from 660 feet to 200 or 300, in other words,

you may have two wells that are direct offsets and 330 feet from the line.

Q. Diagram to the Commission the grouping of the wells as they were drilled on the 20 acre spacing in the Schuler-Jones field, can't you draw a diagram for the Commission of the spacing in the Schuler-Jones field?

A. If I would have thought I would be asked that, I would have brought an exhibit with us, we did have. I draw on the board a section, the original drilling at Schuler was NE¼ of the 40 and SW¼ of the 40. (Reporter's Note: The witness drew on the board 3 diagonal lines and 3 parallel lines, lines all being spaced about the same dis-[fol. 922] tance apart, when all placed properly making four squares.)

Q. You mean of the 40 acres quarter?

A. Yes, sir, and the wells were drilled under that condition in the east half of the field in that manner and the cluster of wells around any section of any corner.

Q. Then, the distance between the wells at the corner of the 40 acre tract was 660 feet?

A. Yes, sir. That is the closest distance in the Schuler.

Q. Now, then, the distance between the closest was what?

A. About the diagonal of that was about 1300 feet or 1400 feet.

Q. 1300 feet or 1400 feet, now I will ask you if it wasn't a fact that in the Schuler field the center has a gas dome?

A. No, not originally.

Q. No.

A. No, it was a gas dome because of the millions of cubic feet of gas pumped back in it.

Q. Yes, and the oil has been forced down on the side, on all sides?

A. Yes.

Q. And the field being in the shape of a circle?

A. That is correct.

Q. I will ask you to diagram to the commission the field [fol. 923] showing the flanks and the well locations on the flanks.

A. Do you wish a cross-sectional view or plan?

Q. Aerial view.

A. I don't know, counsel, whether one can do it by

blackboard representation, it does take a little bit of time, but, I will be glad to indulge in that. The square that I have drawn on the board, each square encompasses 40 acres.

Q. Now, Mr. Witness, the plan and the pattern that you have drawn, is that what contained all of the field or just parts of the field?

A. In 1927, there was a question there whether that could be 20 acre spacing and it was drawn for the lawyers to make up their minds and about two years later the lawyers decided that it was safe to drill 20 acre spacing and thereafter the wells were drilled in the center of twenties in the West half of the field. I draw a square in the center of the field and on the West half, it is this pattern (indicating) and this one-half is of this pattern (indicating).

Q. Now, then, will you go ahead and show the Commission the wells on the oil producing flanks?

A. I have a map, Mr. Commissioners, that represents the Jones sand in the Schuler field and the circles represent the gas injection that was appearing in the general 62, 53, and 64 which is the highest part of this dome.

[fol. 924] Q. Now, I will ask you if it isn't a fact when the Schuler pool was discovered, it was not a gas cap dry pool.

A. It was.

Q. Now, will you take this ordinary lead pencil and draw a line around the area occupied, slowly by guess, and which lines will show the gas-oil contact in the Schuler pool at the top of the first oil production.

A. I draw a fuzzy line, approximately in the center of the gas cap.

Q. And that gas cap probably contains how many acres?

A. I don't remember the exact figure, but I can state it from knowledge——

Q. Approximate it from the lines you have drawn.

A. Say, about four or five hundred acres.

Q. Less than one section?

A. Let's make it a section. It's easier to remember.

Q. From four to six hundred and forty acres?

A. Yes, sir.

Q. The total acres in the field are how much?

A. Approximately three thousand.

Q. Now, I will hand you a yellow sheet of paper and I ask you to draw on that with pencil a thorough represen-
[fol. 925] tation of the Cement Medrano pool.

A. I draw the familiar wedge, raising up to the point of the wedge as represented on exhibit 24.

Q. On the cross section?

A. Now, I strike that out and on the back side I draw what apparently will look like Exhibit 55, as a general configuration of Exhibit 55 for which is the general configuration of Exhibit 24.

Q. Now then, I will ask you to draw a line across the area which you have designated as the West Medrano pool, the finding of the line between the oil and the gas sands, at the time of the first production.

A. Generally, the wavy line I draw represents the gas-oil contact originally.

Q. I will ask you if it isn't a fact that the surface area overlying the gas sand is three-fourths of the surface area, is three-fourths of the entire pool of the area of the entire pool?

A. I think that is approximately correct, yes, sir.

Q. Now, does that representation appear from the line that you have drawn on this piece of paper.

A. I will indicate it three-fourths represent the gas area and one-fourth represents the oil area and this cartoon will be interpreted in that manner.

Q. Now, will you take copy of Exhibit 24 and draw as accurate an line as you are able to draw in the defining and
[fol. 926] outlining the oil-gas contact at the time of the first oil production.

A. I will be glad, counsel, to draw that line, but it will be exactly as shown by Exhibit 57.

Q. Now then, will you, looking at Exhibit 57, draw the line for the record as nearly as you are able to do so correctly?

A. Counsel calls attention, Mr. Commissioners, to the fact three-fourths of the surface area of the Medrano field is originally underlying by gas only and by one-fourth of the gas surface is underlying by oil.

Q. Now, I have caused the Reporter to mark the paper that you have made, the drawing as Exhibit 80 and also the map that is a copy of Exhibit 24, upon which you have drawn the line of gas-oil contact as the Isopac map for that purpose, which has been marked Exhibit 81.

A. I am going to erase the red line that I drew, Mr. Bond, and more correctly represent it.

Q. On Exhibit 81?

A. Yes. Now I shall redraw the line, counsel, I will draw the more correct line with a slight wave to indicate that it is to be regarded as more correct.

Chairman Bond: The Commission will recess at this time until 1:30 p.m.

[fol. 927] Q. Mr. Kaveler, you have now made a wavey line across that part of Exhibit 81 which purports to represent the West Medrano pool, which you have marked to show approximately the contact, gas to oil from a surface view,—is that line as nearly correct as you can draw it?

A. That line represents the gas-oil contact line drawn on Exhibit 55.

Q. Do you tell the commission that that part of the Medrano pool north of the line represents three-fourths of the area of the pool?

A. Yes.

Q. Will you mark three-fourths in that area?

A. I now mark three-fourths on the Exhibit.

Q. And you state to the Commission that the area south of the lines constitutes one-fourth of the area of the Medrano pool?

A. Yes, I now mark one-fourth on Exhibit 81.

Q. Now, then, I will ask you to state if it is a fact that when gas is injected into the,—is it the Schuler-Jones,—the Schuler field, in Arkansas, that there was, for all practical purposes, no gas left in the gas cap other than that we could get out from the gas in solution?

A. Well, there was some gas cap,—the significant in a gas-cap,—whether or not injection of gas will increase the volume of oil.

Q. You say there was some gas in the gas cap in the Schuler field at the time it was Unitized?

[fol. 928] A. I want to complete my answer.

Q. Go ahead.

A. So, the fact that the Schuler had a large gas cap and the Medrano had a small one has no significance, even if 99 per cent of the area had been gas cap.

Q. Now, then, I will ask you to mark on Exhibit 79 the wells that are producing oil in the Schuler field?

A. I can't do that from memory,—Counsel may remember that my testimony was that the oil was taken from those wells, but if you want the correct figure my monumental memory doesn't extend that far.

Q. I will ask you if it-s a fact that the wells in the top of the pool, was in the red lines are the areas in which gas was injected?

A. Not all of them.

Q. Those wells are closed because the oil underlying them is now being swept down hill into other areas. Now, then, I will ask you if it isn't a fact that the wells between the points of gas injection along the wavey line which represents the area from which oil is being taken haven't been closed in?

A. Generally, yes.

Q. That indicates that they are in the area in which the oil lies?

A. Yes.

Q. Have any of them been closed in in which the oil is now being produced?

[fol. 929] A. No.

Q. And oil is now being produced on the plank of the Schuler field, is that right?

A. Yes.

Q. And considering that spacing of 20 acres and the wells are drilled accordingly, I will ask you what the space is between wells is on the flank of the structure which contains the oil?

A. From 660 feet to 22*oo* feet.

Q. Will you show me some instances in which they are 2200 feet?

A. Well, if I had my,—I can't do that from memory.

Q. Well, will you show me where those wells down on the flank are being closed in? Why they are being closed in?

A. Because down in that area in which they are the pressure maintenance operation is so effective that we could produce 40,000 barrels a day from the Schuler and the allowable is only 8,000.

Q. But those wells will be used for production of oil before this operation is completed?

A. Undoubtedly.

Q. Show me the wells down on the flank of the Schuler field——

A. Wait a minute,—Counsel wants to call *a* attention to the fact that the Schuler is on 20 acre spacing before it was Unitized. 660 feet was the distance between the wells. I call Counsel's attention to the fact that formerly the wells in some instances were as much as 3000 feet apart. The [fol. 930] wells are generally spaced 660 feet from each other according to the drilling program indulged in before the unit was formed. I said this morning and I'll be glad to repeat it, that the amount of oil that can be recovered from a field doesn't depend on how many wells it has on it, it depends how the field is being operated. The question is whether or not pressure maintenance operations will produce more oil,—*pressure maintenance operations will produce more oil.* The mere drilling of a well doesn't insure recovery of oil. No oil can be recovered from a field which has no pressure. Oil can be recovered only so long as pressure is maintained and then only in the degree that pressure maintenance is accomplished. The Schuler is producing as much oil from fifty wells as from 140 wells and by producing from only one-third of the wells it is producing more oil than when 125 wells, the relationship depends on whether or not the pressure is maintained.

Q. Do you mean — tell the Commission that you could recover all the oil in the Schuler pool from one well?

A. If it was all, yes. I think if it was limited to 80 acres and Unitized and one well with pressure maint-ance to 80 acres would produce as much as,——

Q. Then you do agree with Mr. ——?

A*ns.* Well, he was referring to this kind of pressure depletion.

Q. Well, I'll ask you if it isn't a fact that even under [fol. 931] Unitization and unit production you would have

a lot of oil left in the pool, in the reservoir, which is never recovered?

A. Yes, the only way anyone can take all the oil, the only way in which all the oil could be recovered is to go down there with a rag and vacuum cleaner and clean it up. (Answer continued on next page)

[fol. 932] A. If we get 75 per cent recovery from the Medrano sand, that would be the physical limit to what you could possibly extract out of the sand in the absence of a cleaning process, or cleansing process. That is the reason, as I said that the oil sucks up out of the oil zone into the gas-cap is unrecoverable because of the capacity that the sand grains have to hold those loose films of oil and that oil is inaccessible to recovery through water-flooding or through gas injection. Even pumping water through the sand does not accomplish the removal of all the oil which is trapped in smaller confines of the porous rock, so that as good as it might be there is no known method whereby operating from the surface into the subsurface it is possible to get the 100 per cent recovery of the oil in place. I think the unitized operations in the West Edmond field will permit finally if water-flooding is indulged in, a recovery of 75 per cent of the oil that was originally there.

Q. As I understand your testimony the oil is used operation by pressure maintenance, as you have described it, is the driving of oil before the gas into the well bore of the wells from which you expect to produce it, is that correct?

A. Yes, sir.

Q. Now, as you drive the oil before the gas, I will ask you if it isn't a fact, that the further you drive it, the further you have to drive it the less oil you will recover?

A. No, sir.

Q. That isn't true?

[fol. 933] A. No, sir.

Q. You mean you can drive the oil with the gas any distance you so desire without losing any of the oil?

A. As long as it has a downward movement in the manner in which you first stipulated, the answer is "yes".

Q. It will in such condition as you have in the Medrano pool, which I suppose is downward?

A. Yes, sir, it will be driven by means of gas injection

into the gas-cap downward through the oil zone into producing wells. The amount of recoverage does not depend on the distance in which the oil is driven.

Q. Now the shape of the Medrano pool is like a woman's skirt, flared out, is kind of small at the top and then it is fan shaped at the bottom, isn't that right?

By Mr. Williams: I object to the competency of the witness to discuss women's skirts.

A. I object to answering because of *foral* reasons. The answer is generally yes,—Exhibit 79,—not being acquainted with the latest fashions, I will attempt your description of that.

Q. It is a good deal like a fan?

A. I think that is more apt.

Q. The oil bearing strata sprung out over the long end or the outside edge of the fan, isn't that correct.

A. Yes, sir.

Q. Now then, you were driving the gas from a point at the narrow or handle of the fan, isn't that correct?

[fol. 934] A. I suppose so, yes.

Q. Now the fact you are driving it from a fault where lineal,—from an area banded by a smaller lineal perimeter to an area beanded by a longer lineal perimeter will that have any *affect* as to driving the oil in the sand and forcing it into the well bore of the well?

A. No, sir.

Q. It will not?

A. No, sir.

Q. In other words, if the long end of your fan spread out for fifteen miles instead of four or five as in the case of the Medrano pool, you mean to tell the Commission you could, drive the oil the whole fifteen miles to the well on the last, on the end of the fan and produce the oil within a reasonable time considering practical purposes of production?

A. No, sir.

Q. You don't say that?

A. No, sir.

Q. All right, then how far can you drive the oil in that sort of a formation for practical purposes, you can't drive it fifteen miles, how far can you drive it?

A. I don't know that there is an answer to the question. I would say that you could drive it further than you would have to drive it, than you propose to recover this unit operation.

Q. Can you say how far, does your knowledge and engineering experience permit you to say?

[fol. 935] A. Oil can be pushed for a great distance in reservoirs. Then you add on practical reasons which changes all the testimony.

Q. Stay within the realm of practicability on production?

A. I will answer this way, oil can be mechanically pushed for greater distances through the sand than will be required to be pushed in the unit operation to be proposed.

Q. You do not desire or cannot tell the Commission how it can be?

A. Yes.

By Mr. Williams: Why is it important how far — can be pushed under ordinary conditions?

A. The maximum condition of pushing it would lie between one and ten feet and 5000 feet in the Medrano pool and can be pushed further than that if you desire to do so.

By Mr. Reford Bond, Jr.:

Q. Now then, I will ask you this, if it would be practical to try to push the oil from one sector in the Medrano pool to another?

A. I don't understand your word "sector".

Q. Well, segment?

A. No, sir.

Q. It wouldn't?

A. No, sir.

Q. I will ask you to state to the Commission if one well would be sufficient to produce all of the oil in Segment "E"?

By Mr. Williams: If the Commission please, this is becoming fantastic, there is no proposal to produce all the oil [fol. 936] from any one well. There is a large number of wells that is going to be produced, now the fantastic discussion as to whether or not one well is sufficient is unim-

portant in this hearing. Where is the bearing, is there any proof here that it is going to be produced from one well. There is 77 wells in this pool.

By Commissioner Weems: Mr. Bond, do you propose to ask about one individual well in one sector or segment, or are you going to ask him about a lot of wells, a lot of segments.

By Mr. Reford Bond, Jr.: No, now I am going to ask him about one well.

By Commissioner Weems: In each segment?

By Mr. Reford Bond, Jr.: Yes, sir, how far you can push this oil. The witness has testified that the oil cannot be forced from one segment to another.

By the Witness: You asked me if it would be practical to do that.

By Mr. Reford Bond, Jr.: Yes, and I am talking about practical production. Now then, I am asking him if he could recover all the recoverable oil in segment "E" from one well, and his testimony has been, the pool is like the S-huler-Arkansas pool in respect that they seem to operate it in similar manner, that they shut down numerous [fol. 937] wells in the Schuler field and produced from wells three thousand feet apart. Now then I want to — him if one well drilled in segment "E" will produce all of the producable oil in segment "E". I think it is very material so we can determine how many wells can be drilled on unit operation.

By Judge Brown: How many wells do you have in that segment now?

By Mr. Reford Bond, Jr.: Ask him.

By Judge Brown: Don't you know, you ask me and I'll tell you, just swear me,—I believe he says he is going to produce one sector of one well and says he is going to produce them similar. Mr. Bond objects to the Schuler field and he just told us they are producing from 46 wells in the Schuler field,—probably shut down a 100, there are at least producing 46 wells. He never said in the Schuler field they are producing from one well nor has he said in this field that one well,——

By Commissioner Weems: The Commission would like to

expedite the hearing as much as possible. If he can produce segment as depicted on the map, you may do so.

By Mr. Reford Bond, Jr.: Very well, answer the question.

[fol. 938] By the Witness:

A. Repeat the question?

By Mr. Reford Bond, Jr.:

Q. Can you produce all of the produceable oil under unit operations in segement "E" from one well?

A. Under practical conditions?

Q. Yes, sir.

A. At the present time there are six producing oil wells in segment "E". I think there is no doubt that the unit will not only operate those six but drill additional wells in that segment for the purpose of the recovery of oil in that area.

Q. Are you guessing about that, or are you telling the Commission what you propose to do?

A. I have already testified in my opinion at least seven more wells will be drilled in this pool and as many as will be needed.

Q. Let me interrupt you, you testified you aren't going to tell where you are going to drill those wells?

A. I have already said the wells would be drilled generally along the lowermost part of the structure.

Q. Tell the Commission whether or not one well will drain all the producible oil under unit operations out of segment "E", yes or no?

A. As a practical matter.

Q. Yes.

A. As a practical matter one well won't do it.

Q. Will one produce as much oil out of segment "E" as the six wells that are drilled there now?

A. Under the gas injection pressure maintenance?

[fol. 939] Q. Yes.

A. As a matter of practice and good business, that probably wouldn't be attempted,—if you asked me if it is physically possible to do it, I would say yes.

Q. I said practical?

A. I have answered that question, no.

Q. Now then you propose and expect to produce a certain amount of oil out of segment "E" which you can figure out mathematically under unit operations?

A. I object to the use of the word "you". I don't propose to do anything. The operators of the unit propose to do everything. If you desire to know what my recommendations to them is, I will answer the question.

Q. Read the question.

(Question read by the reporter.)

By the Witness:

A. I don't know what you mean figure out mathematically, I can give you what is regarded in the industry as a reliable estimate,—is that what you mean by mathematically accurate?

Q. Is that the figure you have been giving the Commission?

A. I have been giving the Commission what I considered to be reliable estimates based on best engineering judgment, the type on which the American petroleum industry has spent thousands of dollars and the type on which all petroleum operations have been carried forward.

Q. Is that the figure you give now in response to the [fol. 940] question, found as mathematically accurate?

A. Yes, sir.

Q. All right, that will do me, you expect to recover a certain number of barrels of oil from segement "E" under unit operations which you have calculated?

A. Yes, I have testified that it is 35 to 50 per cent of the oil in place.

Q. Now then, you expect to recover that oil through the six wells that are drilled in segement "E" and possible additional wells?

A. Yes, sir.

Q. Could the same oil be recovered from less wells, that is within the same time and in the same practical length of time?

A. It may or may not.

Q. May or may not?

A. Yes, sir.

Q. What do you mean by "it may or may not", under what conditions might it and under what conditions might it not?

A. If the Commission would permit sufficiently high allowables the field might produce oil in a short time, but if allocations are cut down it would take a longer time. A man cannot answer a question of that character.

Q. You know what I am getting down here with you, I want to know if it is going to take all six of these wells, and possibly more to get all the oil you estimate to get out of this segment or could it be done with less well bores. [fol. 941] A. I don't think we will shut down any wells in the Medrano pool if that is the connection you have in mind with the Schuler——

Q. If you do shut down some of these wells and you do increase gas contained in this segment, increase the gas pressure and maintain it, would that have any effect on the number of wells that would be required to produce the amount of oil that you estimate could be produced from that segment.

A. Under pressure maintenance it would take fewer wells to get the greater ultimate recovery than in the absence of pressure maintenance.

Q. In other words, do you mean higher pressure, the more gas that you inject into that particular segment, operating a fewer wells you will need to recover oil that you estimated can be recovered.

A. Under proper gas injection program, yes, sir.

Q. Then the number of wells you propose to use as mechanicals means to obtain the oil that you estimate can be produced is determined by the amount of gas, and the amount of gas pressure that is in the particular segment during the time that the oil is produced.

A. In part and a lot of other conditions.

Q. But those two things vary one with the other,—the more pressure the fewer the wells required to capture the oil which you estimate and you produce?

A. Generally speaking and with due regard to the proper

application of gas injection program, the answer is, yes, sir.

[fol. 942] Q. Then, if you introduce 20 acre spacing down here and double the number of well-, would you *would you* not have to introduce as much gas and maintain as much pressure to produce the amount of oil that you have told the Commission that you can produce from that segment under Unit operations?

A. If you would have to introduce the same amount of gas in either instance. The number of wells does not determine how much oil is going to be recovered. It is the amount of gas injected in the degree of pressure maintenance,—not the number of wells.

Q. You have estimated a certain amount of oil can be recovered from segement "E"?

A. Yes, sir, 35 to 50 per cent.

Q. You propose to do that by using six holes drilled in the ground?

A. I have answered that question six times.

Q. And the answer is yes.

A. Yes, sir.

Q. Now then you also told the commission that the number of wells that are necessary to produce this that you estimate can be recovered is dependent on the amount of gas and the pressure that is introduced or induced into the segment, to the reservoir, I wish you would explain to the Commission how you can say that the amount of gas and the pressure maintained varies inversely so to speak, to some degree at least, with the number of wells required produced the oil and then come right back and say that the number of wells are drilled into the sand is [fol. 943] immaterial as far as producing this oil under unit operation, those two things do not go together?

A. They do not in your mind. I am glad to have a reason to explain it. Mr. Commissioners your counsel and I agree it is the maintenance of the explosive energy that determines whether or not that oil can even be trapped into the well bore. The only function of the well bore serves is the fact, that as a bucket or spout, where the oil can drop from the formation into the well bore, that is the only function of a well, but the oil back here in the sand can

never be recovered until it makes its appearance in the well bore. Now crude oil in the stock tank is like ink in the reporter's bottle. That ink shows no tendency to jump out of the bottle and float around. That is the way crude oil is in stock tanks. Crude oil does not possess the ability to flow, it can be poured but it won't of its own volution flow from the reservoir; therefore the only thing that causes production of crdue oil is the presence of some explosive agent. In West Edmond that explosive agent for productive force is gas and the productive gas will be there so long as gas is there. The measure of the productive force is measured higher the pressure of that gas, the greater is its productive force, so that the only matter of concern is to maintain a gas pressure and in addition to that the only matter of concern is to cause that gas pressure to be exerted in the direction of a well. Now, with that in mind, I call the Commissioners attention to the fact, what is involved here is this,—that at one [fol. 944] point the commons source of supply, there is going to be a well in which gas energy is to be injected, and another point in the common source of supply is to be another well towards which that gas energy is to be directed, and in directing it through the second well the gas is going to push the oil ahead of it and be the productive force for the recovery of the oil. Now as gas is injected into the well it fans out, it spreads out, sometimes great distances from the injection well and makes a sweeping pattern, which sweeping pattern is the producing well. That is called the well pattern. If there be one well located here (indicating) oil well A there will be another well located over here (indicating) well B, another one here (indicating) oil well C, all in the common source of supply and the gas injected here (indicating) will be directed towards all those wells,—under the pressure force oil well A may be produced at a higher rate, you can close in well C and B for awhile so as to direct the gas towards A, after a time you may decide in order that the effect be controlled, you will retard A for awhile and open C and keep B closed and caused gas to be exerted as a productive force. The operator has a wide choice and has an opportunity for the first time to exercise reservoir control. It maybe after

the gas has accomplished the recovery of the oil in these directions, there is no reason why in the terminal point of this operation the original oil well C can be converted into an injection well and gas injected in C and cause its direct productive force to be exerted into the direc- [fol. 945] tion of well A and the area intervening between. Originally C and A may be swept out by gas and various combinations of that type can be indulged in. Unit operations has complete control of the conservation program,— so that Mr. Counsel, that is the explanation how it is possible to use one input well and several producing wells to effect what is called a sweeping out of the oil bearing zone.

Q. Now as to the West Medrano pool I will ask you whether or not any sort of well spacing would be beneficial, I won't say beneficial, but whether well spacing would be better than any other sort of well spacing?

A. No well spacing at all would be the best.

Q. Well they would have to be a space between the wells?

A. Of course, you are quibbling with words

Q. How far apart should your wells be drilled between injection points and the point at which your oil is produced?

A. Counsel, that is immaterial.

Q. It is material under your testimony inasmuch as you say you will project, that is push all the oil down toward the water level and when you get on down to the water level you force it along the water level until you get to the last well, that is your theory isn't it?

A. Yes, sir, generally.

Q. I want to know, what I want you to tell the Commission is how far should be the distance between these points of where you inject the gas and extract the oil in order to recover all of the oil of any particular segment [fol. 946] in West Medrano pool?

A. The distance between these wells is immaterial. Counsel will jump on the band wagon of impracticability when he knows not what else to do. The only matter of importance is this,—you have an injection well, you have some producing well, you have an allowable or you have

capacity to produce, the operation could be effected by three wells the operation could be effected by perhaps two producing as well as would be injection well, the operation might be effected by drilling intervening wells such as we propose to do. We propose to drill other wells. Counsel desires to know the geographical location of the wells.

Q. Why don't you let the Commission say whether it is material?

A. I now recommend that to the Commission in my statement and they will say finally,—so the question whether or not,——

Q. Do you know?

A. I do know.

Q. You know where they are going to be located?

A. Such a trivial consequences I am not concerned with. Counsel wants to know the distance between those, the distance between might be a hundred feet or a thousand feet, within the confines of this pool, is not important. The important thing is whether we are going to be permitted to pursue this type of operation.

Q. Under logical engineering, would you tell the distance, would you tell the Commission what factors there [fol. 947] are that would vary the distance between these wells.

By Mr. Williams: Witness said a number of wells depend on many factors, the principal one is allowable and they want to produce oil at a greater rate they produce for operation.

By Mr. Reford Bond, Jr.:

Q. Your testimony two wells in any one of these segments would be sufficient to produce all the producible oil is that segment?

A. I have answered that question a half a dozen times.

Q. No, you haven't?

A. Under certain conditions which you apparently have in mind, the answer is "yes".

Q. What are the conditions I have in my mind? What you think I have in my mind?

A. It is rather difficult for me to express a judgment on that.

Q. You have already done it.

A. I hate to give public voice to my thought in that matter.

Q. Well is it or is it not possible under unit operation, and for practical purposes to produce all of the oil in any one of these segments in the West Medrano pool by the use of two wells, one to inject gas and one to let the oil out?

A. As a practical matter under the stipulation you made awhile ago, the answer is no.

Q. How many wells would you have to have for a mini-
[fol. 948] mum number you will need in segment "E".
[fol. 949] A. That depends on so many things that I can't forecast.

Q. There are gas wells there?

A. I thought you meant oil wells.

Q. Holes in the ground.

A. There are six producing oil wells and two producing gas wells, do you desire for me to state how much will be drilled in segments?

Q. No, the number that will be used to produce oil, producable under unit operation, the minimum number of wells.

A. If you want the minimum number and practical numbers, let's say six. There are six there now as the minimum.

Q. What is the average distance between those wells?

A. Oh, (Witness goes to the blackboard and figures) about eight or nine hundred feet.

Q. And how many gas wells will you need?

A. One or two or three, it depends a great deal on circumstances.

Q. All right, now then, how many will you need in Segment D?

A. How many what?

Q. Oil wells and gas wells to produce the amount of oil.

Commissioner Weems: Couldn't the same amount of questions that you asked as to F before A, B, C and D.

A. There are five wells there now and that number [fol. 950] should be used as a minimum.

Reford Bond, Jr., continues with the Witness:

Q. You don't believe that you could get along on any less than that?

A. We could, depending on circumstances, and then Segment C.

Q. I am not talking about Segment C. We offer Exhibit 79, 80 and 81.

Mr. Kellough: We object as they are mapped as something that is very precise and this free-hand piece of drawing on this piece of paper is the most highly incompetent, irrelevant evidence that could be admissible.

Reford Bond, Jr.: The witness testified from them.

Commissioner Weems: The objection may be correct, but we will admit them for what they are worth.

Reford Bond, Jr.: That is all we have at the present:

Mr. Adams examines the Witness:

Q. Mr. Kaveler, I believe you testified that you did not know, or if you did know, you did not want to state where either oil or gas in—or any new wells drilled to the oil bearing sand in that sand will be located, it is a matter which the Commission will subsequently determine, I believe in substance I want to be sure about that.

[fol. 951] A. I appear here to represent only one party of the unitization, it will not be in the hands of one company, Phillips Petroleum Company, but a operating committee and all the operators, all operators will rule and run this jointly and it will be up to a vote after the advice of the engineers and petroleum geologists, and he proposes a operating detail that is of no significance. It will be in the Medrano pool whether injection wells or producing wells and not in strict performance to property lines, but performance to the engineering standpoint. I am not trying to escape any answer that may be put to me by counsel.

Q. Then, if I correctly understand you, I misinterpreted the previous matter, it is a matter that you want the

Commission to prove the plan without being advised as to how the plan is being operated without being operated by a group of operators.

A. I assume that you are intelligent enough to read House Bill 339.

Mr. Brown: He is not a lawyer, but about as good as some who claim to be lawyers and there is a plan here that has been introduced as an exhibit and it's not his business to state how it is to be operated out there. Then this plan and those statistics of the State of Oklahoma and House Bill 339 and the plans set forth and the rules and regulations of the Committee will rule it. And when they ask [fol. 952] him, Mr. Kaveler, how he is going to operate, then he is going too far, because he won't be the operator.

By Mr. Kaveler:

A. I answered the question. I adopt the statement given by Judge Brown.

Q. In any respect whatever, the plan is whether it was discussed or not, and will function under the operators' committee and be further supervised by the Oklahoma Corporation Commission.

Mr. Kellough: We object to that as argumen--tive.

Commissioner Weems: The Commission would like to know.

A. I think that the Commissioners know that all oil fields operating in the State of Oklahoma are under the jurisdiction of the Corporation Commission and it's just one more field in Oklahoma that comes under that category.

Q. You completed your answer?

A. Yes, sir.

Q. But the Commission will not have any say as to how many wells are here now or how many they will have.

A. You don't know how much time, I mean, I don't know how much time they have, that is, the Corporation Commissioners and they will see that that comes in the proper manner and I suppose that they will participate in that selection. As you know, their docket is congested and they have a lot of things to do. That will be up to them.

[fol. 953] Q. Referring back to the Palmer-Sturba lease and the computation which you and the operators' committee made, dividing between the Palmer Oil Corporation and Gulf Oil Corporation, the participating factor which, under your plan, you allowed to the Sturba lease, correct me if I am in error, do you make that computation based on that question of the oil bearing sand located above or below, respectively, to the two companies, the 600 foot level from the surface of the earth, is that right?

A. Yes, sir.

Q. Or was that made in accordance with the geological report given to the operators' committee?

A. It was made by drawing a line 600 feet below the surface of the earth on the basis of the statement of Mr. Tom Palmer himself, and he appeared in Tulsa and made no claim on anything below 600 feet below the earth and he asked that——

Q. We ask that his answer be stricken.

A. I answered, yes.

Q. You didn't answer the question. I repeat the question to save time. You took the geological maps prepared by your Committee showing the location of sand thickness and in making this determination of the 600 foot level, you used the elevations on which this map, the geological maps, were prepared.

A. That is correct.

[fol. 954] *A. That is correct.* (repetition)

Q. You will recall, perhaps, Mr. Montgomery's testimony in regard to these maps to the effect that all elevations in this Medrano area are taken in from the surface of the earth, but are taking from the bushing above the derrick floor, do you remember that?

A. Yes, I recall that, yes, sir.

Q. And, actually wasn't it about 18 feet from the surface to the top of the bushing from the top of the derrick floor?

A. Generally, yes, sir.

Q. So that is then, in this computation, an error of about 18 feet, isn't that correct?

A. I don't believe that is, but I will have to re-examine it to be sure.

Mr. Williams: May I state at this time, in view of additional information gained in the Sturba No. 7, the figures from the Sturba lease are presently being recalculated based on the actual surface of the ground and that is a matter of information of the Corporation Commission's records, these records are to be completed, we would like to tender to counsel to have his engineers sit in on the calculation.

Mr. Adams: We would like that.

Mr. Williams: And it is extended and it will be avail-[fol. 955] able for the Commission.

Mr. Adams continues with the Witness:

Q. Is there to your knowledge, has there been any of the wells drilled into this Medrano area in West Cement into the gas zone thereof, but flowed openly when complete and waste of the gas in and effort to make what would appear to make an oil well out of a gas well.

A. I am not familiar with that practice. I suppose, though, that some operators who clung to the idea if you blowed long enough and hard enough you could suck oil into it.

Q. Are you familiar with the practice followed by the Phillips Petroleum Company in reference to Phillips-Fletcher No. 7 well, perhaps blowing in into the air for two or three weeks.

A. If you say that they did, you are probably correct, because you are a man of such integrity that I believe you.

Q. I do know.

A. Counsel is of such integrity that I believe it.

Q. You are not familiar with all that?

A. I can review the records.

Q. If that occurred, it was not intentional, but it was unfortunate.

A. It is a practice that Mr. Palmer probably may approve, now as to my company, that is unique and it strug-[fol. 956] gles and maintains a reasonable place in the oil industry.

Q. Referring just a moment, your testimony was that water or gas or pressuring or rather gas re-pressuring or water flooding might be adaptable in the various segments

in the Medrano area for the reason that you felt each of the segments of the reservoir was closed when you say——

A. I didn't say that. Counsel, I am sorry you misstate my statements.

Q. Perhaps I misstated or misunderstood.

A. You did.

Q. I thought you said this sort of secondary recovery would work because these are closed reservoirs.

A. I said because the Medrano sand was closed reservoir.

Q. Where does the Medrano sand, taking in all of the five segments, where does it become closed as one reservoir, show on the map.

A. As I stated, approximately from the history and character of the field, the Medrano sand is beyond boundaries of present production. Speaking laterally, going southwestward of the present area.

Q. You think down there somewhere, that all this sand goes together there and that there is a closure down below there and ties in altogether at a water level?

[fol. 957] A. Oh, no, that body of water somewhere, the permeability terminates. I don't think that you should take that statement and value it alone and to worry about the faults, that doesn't enter into the fault picture. I will be glad to tell about that.

Q. You think that the fault lines, the extension of the faults had nothing to do with the closing of the reservoirs?

A. I don't know that the faults extend.

Q. You don't have information as to closing the reservoirs?

A. The fact that the fault of the structure is there and doesn't have anything to do with the general picture of the sand structure.

Mr. Williams: What are you talking about, closing, or are you talking about north and northeast?

A. I speak in the lateral southwestward. All remarks are predicated on that.

Q. Of course, any connection of the Medrano sand below the water level between the segments would not constitute the meanings of conveyance of oil and gas in that locality.

A. I would not debate with you. I would say no.

Chairman Bond: We will take a ten minute recess.

[fol. 958] Q. Mr. Kaveler, on cross-examination you were interrogated quite at length with respect to the cost of operations by Unitization and gas injection,—I'll ask you if the cost of that operation will exceed the value of the additional oil and gas recovered?

A. No.

Q. Now, the costs of Unitization are not part of the costs chargeable to the Royalty owners are they?

A. They are not.

Q. Now, in addition to being an Engineer, you testified you are more than that, you are Assistant to the Vice-President of the Phillips Petroleum Company, are you not?

A. I am.

Q. Do you have any experience in oil field accounting?

A. I do.

Q. Do you have any experience in oil field general practices?

A. I do.

Q. In how many units did you say your Company is interested?

A. In thirty or more units.

Q. Are you familiar with the procedure, the process and the terms and provisions of the Plan of Unitization marked Exhibit 31?

A. I am generally familiar with the plan of unitization here proposed.

Q. Mr. Witness, from your knowledge and experience as an Engineer and your knowledge and experience as an [fol. 959] oil producer, do you have knowledge whether or not the Plan of Unitization here proposed is fair, reasonable and equitable as between all persons affected?

Counsel for Protestant's objected to as calling for a conclusion of the witness.

Chairman Bond: The witness may state his opinion.

Mr. Adams: Give us an exception.

A. I have such an opinion.

Q. What is that opinion?

A. My opinion is that *that* it is fair and equitable and I may say that the Plan here proposed is one which fol-

lows quite closely many other Unitization Plans that have been in force and effect for many years.

Q. Do you have an opinion as to whether or not the Plan of Unitization here proposed is, in your opinion, one suited to the particular conditions of the West Cement Medrano field?

A. It is.

Mr. Adams: We object to that question as calling for a conclusion of the witness.

Chairman Bond: He may give his opinion.

Mr. Adams: Exception.

Q. Will, in your opinion, the adoption of such a Plan result in the common good of all interested in the Cement West Medrano pool?

Mr. Adams: We object to that as a conclusion of the [fol. 960] witness.

The Court: If he bases his opinion on his knowledge and experience, he may answer.

Mr. Adams: Exception.

A. My answer is yes.

Q. Is the adoptions of this Plan for the general advantage of everybody concerned, to the general advantage of everybody concerned?

A. The Plan here proposed is for the general advantage of all and for the common good of the people interested in the pool.

Q. You were asked to calculate some of the figures in Exhibit 53?

A. I was, yes, sir.

Q. I will ask you if you made those calculations in that Exhibit and if the conclusions therein reached were all made and arrived at in accordance with good mathematical procedures and factors?

A. They were.

Q. I hand you what has been marked Exhibit 74 concerning which you were asked yesterday to testify on cross-examination,—do you recall that Exhibit?

A. Yes, sir, I do.

Q. I'll ask you if the well referred to in that Exhibit is a well drilled in the West Cement Medrano field?

A. It is not, this well is a Fortuna-Greogroy Oil Company well and not within the West Cement Medrano area. [fol. 961] Q. Is there any indication or connections between the field in which that well was drilled and the West Cement Medrano field here under consideration?

A. There was none and there is none.

Q. Do you know the date on which the discovery well in the West Cement Medrano field was drilled and completed?

A. I have the date here,—as I remember it was in 1936. The first well drilled in the West Cement Medrano field was the Magnolia-Medrano No. 6 which was completed October 28, 1946.

Q. Are you in general familiar with the term used in oil field operations?

A. Yes.

Q. Do you know what it meant by, "discovery well"?

A. Yes.

Q. What was the discovery well in the West Cement Medrano field?

A. The Magnolia-Medrano, No. 6 well.

Q. Are you familiar with the terms, "field", "pool", "common source of supply," and "reservoir" as used in oil field parlance?

A. Yes.

Q. Are those terms more or less synonomous? In this testimony where the "field," "pool" is used in one place and "common source of supply" in another, what significance do those terms have, in your mind?

Mr. Adams: We object to that question, that is a *that* [fol. 962] *is a* question——

Chairman Bond: He may testify what those terms mean to him.

A. In my use of those terms, I use them as synonomous, in conformity with the general practices of the industry.

Q. Are you acquainted with the general meaning of those terms, the usual meaning that is ascribed to those terms in the industry?

A. Yes, in oil field parlance those four words are synonomous.

Q. Now, Mr. Kaveler, isn't it a fact that when you

started out there with the thought that you wanted to secure for Phillips Petroleum Company certain facts and information that you secured the estimates of this so-called Geological Committee which has been marked, I believe Exhibit 68 and when you got that report you discussed it with the members of the Committee and they informed you that you would have a new report showing five separate sources of supply under the Oklahoma Law as one pool and then you took it up again with the Geological Committee and under your guidance these maps showing this pool by segments was prepared, showing one common source of supply in five segments?

A. No answer.

Q. Mr. Witness, you didn't answer that question?

A. No, I didn't.

Q. Well, what is your answer?

A. The answer is no. And I want to make this explanation,—it would appear that the Phillips Petroleum Com- [fol. 963] pany is taking the biggest part in this hearing and some people may have the thought that Phillips is trying to put across this Unitization. Phillips is only one of a number of companies interested. The reason Phillips Company is taking a prominent part in this proceeding is that t-ye, the Company, own a large part, a large percentage. The Company owning the largest percentage should take the lead in formulating the plan beinging about the Hearing and facilitating its progress. The Phillips Company is the largest holder in the Unit and because of our large ownership we have been given that job. The Plan provides for the Unit operator, that the operation shall be supervised, the Company chosen as operator has no privileges, it serves as a service of the operators. The Phillips Petroleum Company is not going to run the Unit or dictate anything in the proceedings. We are only one of the parties amoung all of the parties interested in accomplishing this Unitization.

Q. Do you or your Company have any Supernatural powers which you might exercise in this matter?

A. Unfortunately not,—I do not have such power nor did I ever have.

Q. Now, in Exhibit 68, which is the report of the Com-

mittee of Geologists on compilation of data pertinent to the Medrano sand in the West Cement field, the Edwards fault is mentioned, do you know when that report was filed in respect to the completion of the Potter-Davis well? [fol. 964] A. That report was prepared in October, 1945. It referred to the so-called Edwards fault. It was written out, prepared before the Potter-Davis well was completed. The report was subject to amendment as a result of the information obtained by the completion of the Potter-Davis new well.

Q. Did you hear the testimony of Mr. Montgomery, that the completion of that well was the reason, that the completion of that well and the data thereby obtained, was the reason for the change.

Counsel: It is my recollection that Mr. Montgomery so testified.

Chairman Bond: You may ask him, he is behind you.

Q. (Addressed to Mr. Jack Montgomery) Did you so testify.

Mr. Montgomery: I believe I did.

Q. Is my statement a correct statement?

By Mr. Montgomery:

A. Yes, it is.

Q. Mr. Kaveler, did you have anything to do with that change?

A. No, I have no influence on Geologists.

[fol. 965] By Mr. Adams:

Q. Mr. Kaveler, after you got this geological report, Exhibit 68, you testified that these faults were evidenced by some shallower wells drilled, I mean drilled in this same area, but drilled to shallower horizons, why didn't you direct or request your geologist to prepare an analysis of the geological information with respect to the existance of these faults as were evidenced in these shallower wells so as to once and for all remove any doubt as to whether or not this area is effectually sealed off into five segments?

A. That is a geological inquiry. Mr. Montgomery is here and he is competent to testify to it, I am not.

Q. I am asking you why you didn't remove any doubt in this respect when you were drawing this.

By Mr. Kellough: We object to that question, the Witness testified he didn't draw or tell the geologist in what manner to prepare their maps and exhibits and he took those as prepared by them, the questions that assume facts not in evidence and purely a hypothetical question.

By Judge Brown: And furthermore I want to make the further objection that so far as the evidence shows, Mr. Kaveler is a petroleum engineer and not a geologist and there being a geological committee of eight men, I can't understand how it would be becoming of a petroleum engineer to direct the committee of eight geologists what to [fol. 966] do in order to determine whether or not it is one common source of supply or various common sources of supply and therefore the question predicates a qualification on the part of Mr. Kaveler that he has never pretended to have and clearly out of his line,—they have their own way to determine whether it is one common source of supply or whether it is not.

By Chairman Bond: The witness testified he didn't attempt to influence the geologist and he isn't a geologist and didn't have any influence with them, but you may answer the question if you desire.

By Mr. Kellough: Exception.

A. That is a geological inquiry and I think Mr. Montgomery's testimony is the testimony to be relied upon. The operating committee directed the geologists committee to study all information that bore upon the question of the character of this reservoir. I think they did that. Mr. Montgomery's testimony encompasses all their considerations.

By Mr. Adams:

Q. Did the geologists admit to you any maps or other data showing conclusively whether or not these faults constitute complete barriers between the production lying on either side of the fauits.

A. The geologists presented to the operating committee for its consideration maps here introduced in evidence as their final conclusion in respect to the Medrano pool com-
[fol. 967] mon source of supply from the geologic point of view.

By Mr. Reford Bond, Jr.:

Q. Mr. Witness, it is the duty and obligation of a lessee to the oil and gas leases to develop the property and to produce the oil and gas under terms of their contract. Lessors take as their compensation a rent or royalty, one-eighth of the oil and gas production free of all costs, now I will ask you to state to the Commission whether or not the position of the operator and the position of the lessor or royalty owner is always the same as to the percentage of oil and gas produced from the common source of supply under the unitization plan.

A. Counsel, if I understand your question, I think the answer is yes. In other words, the unit plans proposes to assign to tract No. 26, 11.181 percent interest in the unit and the way that the Unit will operate,—all costs of operation will be contributed by the lessee of that lease in that percentage,—all income from the unit operations will be assigned to that lease in that percentage and after the income is assigned, then the income shall be distributed between the owners of interest in the manner in which the existing lease contract requires.

Q. Now you have made a careful study of the division of the oil and gas which is being produced from this area if unitized, have you not?

A. Yes, sir.

[fol. 968] Q. And in that study you attempted to divide the oil and gas equitably and fairly between the persons entitled thereto according to their interest, did you not?

A. As between tracts, yes, sir. There was no division as between interests over all in the field. For example, Phillips Petroleum Company owns considerable acreage and the Gulf owns considerable acreage. The division was not as between acreage owned by Gulf or the acreage owned by Phillips but interest was divided as between separately owned tracts.

Q. And when you decided to divide the interest and assign them to tracts, did you consider the fact that interest assigned to the tracts would be distributed to the lessee on the one hand and the lessor on the other hand according to their interest as provided in the respective lease contracts?

By Mr. Kellough: We object to the use of the word "decided" unless Counsel will stipulate he is referring to the operating committee that indorsed this plan.

By Chairman Bond: You may answer the question. He testified that it would be equitable and justly divided between each and every one of them,—you may answer the question as proper cross-examination.

By Mr. Kellough: Exception.

A. I think the best answer to your question is provided in the plan of unitization wherein section No. 7 entitled "Allocation of Unit Production". There is stated in the [fol. 969] second paragraph the following: "Except as maybe otherwise authorized or provided in this plan of unitization, the unit production allocated to each separate owned tract shall be distributed among and the proceeds thereof paid to the several persons entitled to share in the production from such separately owned tracts in the same manner, in the same proportions and upon the same conditions that they would have participated and shared in the production from such separately owned tracts, or the proceeds thereof, had not the unit been organized and with the same regal force and effect." I think if I understand the question, that constitutes an answer.

By Reford Bond, Jr.: That doesn't answer the question cause I asked you, meaning you and the operators committee, and the people that formulated this unit plan, when you assigned percentages of certain production to each tract, it considered the fact that that portion of the production which would be assigned to each tract was to be then divided and paid out to the lessors, to the lessees as they are entitled to the monies under the lease contract.

A. Yes.

Q. Did you consider those matters, that is contained in

the plan of unitization here presented and just read that to you.

A. Yes.

[fol. 970] Q. What you just read says how it will be paid?

A. Yes.

Q. It will be paid to the lessors and lessees according to the interest of their contract and the interest set out in their contracts, but I asked you that if in preparing this plan wherein you assigned certain oil and gas to the various tracts, did you consider the various interests and the different interests of the lessor and the lessee, I just want to know if you took that into consideration when you fixed this plan, when you fixed it?

A. I think the answer to your question is "no". We have testified, I have testified, and others have testified that what we did in formulating the plan of unitization was to study all the facts in this pool without regard to property ownership. In other words, the geologists and the engineers and the operators meeting in committee and discussing this matter were interested in what was in the common source of supply. There was no question of whether or not the tract was owned by Phillips or a tract owned by Sun Ray. It was not until after the unit plan was formulated and the equities assigned that there was any talk of those equities and summing them up by the operators.

Q. And now then I take it you did not consider the fact that the lessee of tract No. 67, which is the Anderson-Prichard-McClaren A had drilled no wells on that tract under the unitized plan would be required to make no expenditure for the drilling of wells on that tract but would receive from the proceeds of the unit production a certain [fol. 971] portion thereof?

A. Of course the plan provides such tracts as you named, having no well on them, those charged with the cost of operating that tract will have to buy an interest in the investment and contribute to the unit, so there will be expense borne by those people which will be the cost of purchasing a share of physical equipment, that will be contributed to the unit.

Q. But there will be no hazard because what they purchase is already proven and is producing oil and gas?

A. Well if it is proven,——

Q. Isn't that true?

A. Yes, sir, and the re lease is already proven to be productive of oil.

Q. There is no well producing from the Medrano sand?

A. That is correct.

Q. They will have no hazard of drilling a well and the expense of drilling a well, and they will have no hazard as to whether or not their particular lease will produce oil or gas in paying quantities?

A. There is no question in my mind, but what that lease does contain oil and gas that is recoverable.

Q. I didn't ask you that, I asked you if it wasn't a fact is the lessee would not have that hazard?

A. Yes, if you regard that as hazard. I don't regard it as a hazard.

Q. I will ask you if it isn't true of every tract, that is [fol. 972] included in the unit as shown on Exhibit 24 upon which no well or gas well is drilled to Medrano sand?

A. I think that every tract which is included in the proposed unit upon which no oil or gas well has been drilled in the Medrano sand is a tract proven to be productive of oil or gas by the 87 wells.

Q. That isn't what I asked you, answer the question if you will, and tell the Commission whether or not these operators that own these tracts we are talking about will have any hazards of drilling a well, you say which is productive, I am asking you if they will have the hazard of drilling a well and the Commission will know whether or not there is any hazard of drilling wells and the Courts will know.

A. The tracts on which no wells are located and which are included in the Unit having proven to be productive and the equity assigned to them has been in proportion to the amount of recoverable oil and gas which they respectively contribute. I don't think there is going to be a particular use of the word "hazard" if we regard question of hazardness as it applies to the tracts,—in a broad sense the answer to Counsel's question is "no".

Q. That is your answer, is it?

A. Yes, sir.

Q. You say then that the operators will have no hazards of drilling a well on these tracts on which there is no wells drilled?

[fol. 973] A. In the broad sense, using the word hazard, that is my answer.

Q. Now I will ask you to state if there is any hazard as to loss of money by reason of any drilling which might be done on in any lease in this entire field but to any lessor or royalty owner?

A. I believe the answer to the question is "no".

Q. Why certainly, and that is your answer isn't it?

A. Insofar as I can understand your question, it is.

Q. The royalty owners cannot lose anything by reason of operators drilling wells?

A. No, sir, they cannot.

Q. He is not supposed to is he?

A. No, sir.

Q. Under these lease contracts he is supposed to get one-eighth of the oil and gas production from his land or whatever other percentage is shown in his lease?

A. That is correct.

Q. He is supposed to get that percentage free of all costs and all charges?

A. Yes, sir.

Q. Of operation and production?

A. Yes, sir, that is what the plan provides.

Q. I will ask you if you don't think it would be fairer to permit the royalty owners to participate in the conferences and sessions that your various committees had when [fol. 974] their oil and gas was divided up and assigned?

By Mr. Kellough: We have no particular objection to this question except it is a matter to be presented to the Legislature of Oklahoma and not the opinion of this witness.

By Mr. Reford Bond, Jr.: I will withdraw the question.

By Mr. Kellough: I will withdraw the objection.

By the Witness: I will resume my offer to answer it.

By Mr. Reford Bond, Jr.: I will renew the question.

A. Mr. Commissioners we tried to bring the royalty owners into this matter. Judge Brown and I and a few others went down to Chickasha when Mr. Louis Davis was holding a meeting of the royalty owners. We weren't treated with the greatest degree of courtesy, we weren't given an opportunity to speak,—we advised them early but the fire of opposition has been fanned to great flames and our response was not such as to encourage our continued efforts along that line. There is nothing to hide in these deliberations. When eight or nine companies get around the table it is very difficult to even imagine a state of circumstances where each would cheat the other to the point of satisfaction. I don't know how eight people would cheat each other,—there has been no cheating, no fraud in [fol. 975] this matter. The West Cement Medrano is the first unit pattern proposed under House Bill No. 339. We have learned a great deal in this experience. We have attempted as a result of our experience under House Bill 339 to call the West Edmond Royalty owners together and I have gone to Deer Creek School on several occasions attempting to be invited and extended the privilege of explaining this plan. 85 per cent of the royalty owners receive you with courtesy and give you an ear and listen sympathetically. A large percentage of the 85 find out what it is all about, and go with you. It is the small percentages that wage the flame of opposition and create great furor, it is the minority that seek to stop any constructive movement. That minority is successful because the oil business is a mystery to most people; it is an activity far removed from their ordinary lives; it is a business which has advanced with great technical strides in recent years. I doubt whether the industry could meet the responsibility of getting the public educated to the measure that would be required if the royalty owners fully understood what this was all about. Insofar as unit operation activities are concerned, it is my Company's policy to call the royalty owners in at an early date. There are several pools under consideration for unitization now. We are making efforts to meet the royalty owners and form an association and hire a competent engineer to point, appoint one of the representatives to sit with the operators during their de-

liberations. There is no reason why these deliberations [fol. 976] should not be open to the public. Of course, in regard to carrying forward the business proceedings you have to limit the number that can attend. So we are charged with having prepared this unitization and submitted to the Commission without visiting Jim Holland in Colorado and individuals in this County or that part of the County. We do not have enough people to carry this message to them. Had we been publicly received at Chickasha, the plan might have been evolved whereby the West Cement Royalty owners could have sat with us at all times.

Q. Do you have the names and addresses of all the royalty owners have you not?

A. With me, now?

Q. Your company has them?

A. They are generally available.

Q. You sent them checks every month for the pipe line company's did - ?

A. Yes, sir.

Q. To whom you sold the oil?

A. Yes, sir.

Q. You didn't write any letters or send any notices of the hearings and the conferences which you were about to conduct?

A. No, sir.

Q. You didn't ask them to procure an engineer and send him to stand up for their interest?

A. We suggested that to many, including Mr. Louis Davis.

[fol. 977] Q. But not before you already had your conference and formulated your plans?

A. You couldn't propose,——

Q. Isn't that correct?

A. I am going to answer your question. You can't invite royalty owners to sit down and confer with you on anything until that anything is created and exists. In August 1946 was the first time when the Plan complete could be laid before any body. It was only then we could say to the royalty owners, here is something for you - con-

sider, I think it was in August, 1946 or shortly thereafter we made an attempt.

Q. Why didn't you make an attempt to formulate a plan,——

A. What help could they provide?

Q. They could provide an engineer to see that their interests were properly taken care of in the division?

A. They had the privilege,——

Q. Did you issue invitations to the royalty owners or,——

A. I issued invitations to a number of the royalty owners to whom I spoke.

Q. As an oral invitation.

A. Yes, sir.

Q. It was an undetermined number who owned an undetermined interest,—why didn't you send out notices to all of them and tell them when you were going to deliberate about the decisions of the equities and tell them at that time they could appear with an engineer if they so desired to see that their interest was taken care of in the division [fol. 978] of the oil and gas.

A. I think the royalty owners have had an opportunity here to inquire into the division of equities and to determine whether or not the decision has been fair and that was the purpose of this hearing in the main.

Q. You didn't do those things that I stated in my question before you did divide up the oil and gas under your plan?

By Mr. Williams: It is for the operators naturally to work out the plan submitted, b——

By Chairman Bond: Gentlemen, if you stop arguing, the Court will rule. The Commission rules you may ask him if he did these things before he formulated his plan and we will leave out division which might be another question.

By Mr. Reford Bond, Jr.:

Q. Did you do those things that I enumerated in my question before you formulated the plan?

A. No, sir.

Q. Now I will ask you, why not?

A. Because there wasn't anything the royalty owners

could contribute to before the division of equity was accomplished. Everything in this unitization involves the working interest only except the division of equities.

Q. That is your answer.

A. That certainly is.

Q. And still you will admit they are entitled to one-eighth or whatever percentage their leases calls for of [fol. 979] oil and gas produced?

A. Yes, sir.

Q. And I believe you will admit that operators suffered no hazard of drilling a well is more likely to agree that the sand volume under his lease is to be cut in half than an operator who has already drilled a well and proved that his lease is a producing lease, won't you?

A. Not necessarily.

Q. You don't agree?

A. Not necessarily, no, sir.

Q. I will ask you if you will agree with me on the proposition that an operator who has drilled a dry hole on his lease, would probably agree that the sand volume under his lease be cut in half?

A. Not necessarily.

Q. Although it wasn't productive?

A. Not necessarily.

Q. I will ask you if that isn't what the operators did on the lease at the extreme southeast of the Medrano pool and at the extreme northwest?

A. I will reply by saying that certain leases had sand thickness attributed to them and reduced 50 percent in this plan of operation.

Q. And the operators are here and are asking that the plan be approved in that condition.

A. Yes, sir.

[fol. 980] Q. Isn't it a fact you know that the royalty owners are here are objecting to any such division as being inequitable as a whole and as a principal?

By Mr. Kellough: Just a minute.

By Mr. Reford Bond, Jr.: I will withdraw the question.

By Mr. Kellough: He speaks of royalty owners and the lessees on the other——

By Mr. Reford Bond, Jr.: I object because the question is withdrawn.

By Chairman Bond: The question is withdrawn and that ends it.

By Mr. Reford Bond, Jr.: That is all.

By Mr. J. A. Holland: I own an undivided one-fourth interest in the Phillips-Margaret lease and the Gulf-Holland lease, and I own an undivided of the mineral, I also own one-third interest to that quarter section of land.

The following interrogatories were propounded by Mr. J. A. Holland of the Witness, Mr. Kaveler on the stand.

Q. Mr. Kaveler, when you come out to Chickasha at that time you say you didn't get very well received, was that before or after you had assigned this royalty unit interest?

A. Jim,—I think it was shortly place - after the plan [fol. 981] took the form as it is here presented.

Q. You had this all assigned at that time?

A. Jim, you understand the interest not assigned until this Commission signs the Order.

Q. The application?

A. So far as the application is concerned, that is right, it was after that.

Q. Did Jim Holland have a chance that you know of to be present at that meeting?

A. I don't know whether you were here or at the ranch.

Q. Do you know whether he had a chance to be there?

A. I don't know.

Q. Did your company give any notice of what you were doing?

A. The answer is no.

Q. Jim Holland and Kathleeen,—wasn't that pretty good reason why you got the bums rush down there?

A. That's a pretty good reason.

By Mr. Ben Holland: The day Mr. Kaveler speaks of was the day we formed our association. He came there with a bunch of maps, nothing published on them and it was asked to put to a vote as to whether or not they be given a chance to talk. I voted against it. I certainly wasn't in favor of you filibustering our meeting to death.

I lost, and you gained the floor and if I'm not mistaken you talked from a few minutes before 2:00 o'clock until [fol. 982] almost 5:00 o'clock and nobody interrupted you, what better chance did you want. You talked so long there was only a half a dozen people left before you got through, all we had was the privilege of putting up the money for hiring a lawyer to represent us, and all you did was to talk us to death and we give you a pretty good chance, why do you say you weren't received when you had the floor three times longer than anyone else.

[fol. 983] Mr. Williams: Do I understand that the association consists of six people?

Mr. Holland: There were six people left when it came time to put up the money. I don't see that Mr. Kaveler has any complaint.

Reford Bond, Jr.: No further cross-examination.

Commissioner Weems: Do you know about how many royalty owners there are in the West Cement Medrano pool?

A. Mr. Commissioner, I don't know about how many, I don't know whether I have all of the list here, I can give a pretty good idea. The royalty owners are tremendously scattered. The royalty has been sold to a great extent. That is one tract (indicating) Mr. Commissioner, the Garrison eighty acres, it was split into 2,500,000 units and the royalty owners, for example, must have it as represented for the royalty owners, that is *is* there (indicating) right in the general area. I don't know how available it is for Hartshorn lease, there are five individuals which consist of Lucy G. Hartshorn, Eula M. Thom, Mona F. Baldwin, Hazel R. Snavely, and Mabel M. Hartshorn and the Hayes lease has three people and the Sherritt lease is owned by Jane A. Jones, and we have a list with the idea of contacting them and getting them organized and we didn't get far enough along on that. This is a list of royalty owners (indicating) to which we mailed a pamphlet for the purpose of distribu- [fol. 984] tion before the hearing. There are some who own more and some who owned less and some who owned an insignificant amount of royalty, there was something

like two hundred people that we mailed these pamphlets to, which is a statement as to what it is about.

Mr. Holland: When you mailed that statement outlining this plan, was that before or after the date for the first hearing was set?

A. (Witness) I think, Jim, after the date of the first hearing.

Mr. Holland: Yes, sir, you are right, thank you.

Commissioner Weems: That is the condition that I wanted to know about.

Reford Bond, Jr.: At this time I would like to file the answers for the lessors that I represent.

Chairman Bond: Very well.

Reford Bond, Jr.: Together with the names set forth in a separate folder for the reason of Exhibit 83, (Reporter's Note: exhibit in two parts.) we also wish to file and offer as an exhibit an original and two copies of the answer of Tom Potter as Exhibit 84.

Chairman Bond: Both exhibits received as offered.

Reford Bond, Jr.: We also offer Exhibit 85, which is the response of Clyde Kahle and Maude Kahle, husband and wife, and Bob White Oil and Gas Co., owners of overriding royalties under leases in the Cement Medrano pool. [fol. 985] Chairman Bond: Yes, the records show exhibit 85 received.

Reford Bond, Jr.: If the Commission please, there are three more lessors whose appearance are not reflected on the pleadings, they having authorized me to appear for them since the pleadings were prepared. John W. Fletcher, owner of all the minerals under the northwest quarter of section 34, township 64, range 10 west, and being tract No. 18 on applicant's exhibit no. 24. And Eva Parker, who owns 13 1/3's over 160 interest in the northwest quarter of section 35, township 6 north, range 10 west, being tract No. 45 on applicant's Exhibit 24, and Frank Pohlemann, who owns the entire mineral interest in Tract No. 6, as shown on the applicant's exhibit 24.

Mr. Williams: Mr. Kaveler, you referred to a pamphlet that was mailed to the royalty owners, for this purpose I ha-d you an instrument marked Exhibit 82, and ask what that is.

A. It's a copy of the pamphlet mailed by each individual operator to his respective royalty owners, which pamphlet is generally described what is to be accomplished by the unitization operation which is set out [fol. 986] in this pamphlet.

Mr. Adams: We object for the witness to read from the instrument, it's not prope. to be offered, it's purely argumentive.

Mr. Williams: We now offer in evidence Exhibit 82, which will speak for itself.

Mr. Adams: We object to that because it's merely a conclusion and argumentive.

Chairman Bond: Is there any proof to accompany it to show it was delivered, do you have any evidence to show that it was received through the mail?

Mr. Williams: I understod that it was mailed.

A. (By the witness) Postage prepaid.

Chairman Bond: And you have a list of the people that it was mailed to, postage prepaid?

Reford Bond, Jr.: We object for the further reason that there is no proof of who received it and to whom it was mailed.

Chairman Bond: And if the witness can show and show who it was mailed to that is not enough proof. It will be received if he can show the postage was prepaid. The best evidence will be that it was addressed and postage prepaid and the time mailed and place mailed.

[fol. 987] Mr. Williams: We renew our offer under the circumstances for whatever it's worth. If the Commission rejects it, will - allow us an exception.

Chairman Bond: The Commission will receive it, and you may show on cross-examination the notice and what it amounts to. In the present form, we don't know who it was sent to and there is no return answer service on it.

Mr. Williams: I don't think that it is any material evidence and the witness said it was mailed and we offer it in connection with that.

Chairman Bond: Received for what it's worth.

Reford Bond, Jr.: Note our exceptions.

Mr. Adams: We also *accept*.

Mr. Williams: There is one other witness in respect to lease ownership, it will be proper to tender him at this time for cross-examination, if counsel so desires to cross-examination him. May I suggest to the Commission that we would like to have Mr. Kaveler excused as a witness. He has a trip to Amarillo to make. Gentlemen, are you ready to excuse Mr. Kaveler?

Chairman Bond: Very well, Mr. Kaveler, you are excused for the session of this case.

[fol. 988] Whereupon, Mr. Gilbert Wood was recalled for the purpose of cross-examination.

Mr. Adams cross-examines the Witness:

Q. You are Mr. Gilbert Wood who previously testified?

A. Yes, sir.

Q. And employed by Phillips Petroleum Company?

A. Yes, sir.

Q. And have a classification as petroleum engineer?

A. That is correct.

Q. This engineer's report, I believe it is Exhibit 71, is a report on which you testified previously, Mr. Wood, as to the area covered in your report, the number of feet, etc., and the number of acres.

A. I don't recall that I did.

Mr. Williams: I do not see it in the record, this is a transcript of his testimony. (Indicating to copy of transcript.)

Mr. Adams continues with the Witness:

Q. In your previous testimony, you stated that you had prepared a written report from your study of the Medrano area. I take it that you have seen Exhibit 71 and that the report to which you referred in your testimony.

A. I don't belive it was, I would like to have you read that [fol. 989] testimony and refresh my memory.

Q. It's in the transcript on page 4, the last answer on the bottom of that page and the top of page 5, I will read to the witness, I will read the question and read the answer.

(Reporter's Note: Whereupon, attorney read question and answer of previous testimony of said witness to Witness Gilbert Wood on stand.)

Q. Does that refresh your recollection?

A. That is correct. I didn't understand the question previously.

Q. Now, referring and repeating my question, was the written report to which you referred as Exhibit 71, offered in evidence?

A. Yes.

Q. And that is the report that you reported and testified on?

A. That is correct.

Q. Now, Mr. Wood, in regard to that report, will you explain to the Commission when that report was prepared and all of the tables and all of the exhibits in the report and the isopac maps referred to as proposed on a segment basis, Segments, A, B, C, D and E.

Mr. Williams: Now is the Commission please, at the prior hearing, when this witness was put on the stand, I said to the Commission, I am introducing this witness more from a statistical standpoint and I have asked him to cal- [fol. 990] culate from the various calculations, and that his testimony is to be truly statistical information and about all gas and leases and to qualify the witness from an acreage standpoint. He has asked a general question, because he happens to make a brief reference about the studies on the committee, would not require him to answer that.

[fols. 991-992] Chairman Bond: When you offer a witness, you offer him subject to cross examination,—this is improper cross examination.

Mr. Adams: I object to Counsel's inference that there has been some delay caused here by cross examination.

Chairman Bond: The Commission is going to give Applicant and Protestants all the time necessary to try this case.

Mr. Williams: I didn't mean to leave the inference that the cross examination was improper but that it was lengthy,—part of it was improper cross examination, if

they want to make him their witness he is here and he will stay here until they want to excuse him.

Mr. Adams: If the Commission will recall certain exhibits were requested,—we want them to produce them.

Chairman Bond: The Commission will require them to produce the Exhibits.

Reporter's Note: At this time the Commission adjourned and a further hearing of this cause was recessed until May 22, 1947, at 10:00 o'clock A. M.

[fol. 993]

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

LIST OF MINERAL OWNERS AND THEIR INTERESTS—FILED MAY 21, 1947

Tract Number	Name	Interest
Number 3	Kit C. Farwell	40/160 ths.
Number 6	Frank Phohlemann	All interest—160/160
Number 14	Jane A. Jones (Mrs. E. W. Jones)	16/160 ths.
	Mabel E. McKirk (Formerly Mabel E. Sherritt)	26.60/160 ths.
Number 15	Amerlia Beemer	All interest—40/40 ths.
Number 16	Kit C. Farwell	1/2 interest—50/50 ths.
Number 17	Kit C. Farwell	1/2 interest—40/40 ths.
Number 19	Florence M. Plummer	32/160 ths.
	Hazel A. Plummer	32/160 ths.
	Virgie M. Updegrove	32/160 ths.
	Thomas O. Plummer	32/160 ths.
Number 20	Florence M. Plummer	32/160 ths.
	Hazel A. Plummer	32/160 ths.
	Virgie M. Updegrove	32/160 ths.
	Thomas O. Plummer	32/160 ths.
Number 26	Otis (I. O.) Oaks	120/160 ths.
Number 27	Elizabeth Paine	5/160 ths.
Number 28	Kit C. Farwell	3/8 ths.
	Chas. T. Williams	5/160 ths.
[fol. 994]		
Number 29	Chas. T. Williams	5/160 ths.
Number 32	Regina Schlitt (23 1/3 acres)	23-1/3/160 ths.
	Ben P. Butler (20 acres)	20/160 ths.
	Ben P. Holland (33 1/3 acres)	33 1/3 /160 ths.
	T. J. Butler (20 acres)	20/160 ths.
	James A. Holland (23 /13 acres)	23 1/3 /160 ths.
Number 34	Nettie Melton & Fannie McDowell	11/72 int. each
Number 35	Nettie Melton & Fannie McDowell	11/72 int. each
Number 36	Nettie Melton & Fannie McDowell	11/72 int. each
Number 37	Nettie Melton & Fannie McDowell	11/72 int. each
Number 38	J. P. McKenna	10/160 ths.
	J. S. Smith	38/160 ths.
Number- 40 & 41	Eva I. Pierson	3/9 ths.
	Ernest S. Pierson	1/9 th.
	Eva J. Mead	1/9 th.
	Ella Pierson Price	1/9 th.

Tract Number	Name	Interest
	Clarence M. Pierson	1/9 th.
	Richard E. Pierson	1/9 th.
	Minnie E. P. Mooney	1/9 th.
[fol. 995]		
Number 44	L. L. Edwards (13 1/3 acres)	40/240 ths.
	T. G. Gann (2 1/2 acres)	5/160 ths.
	M. M. Davis (9 1/3 acres)	28/240 ths.
Number 44	J. F. Ball (2½ acres)	5/160 ths.
Number 45	Grace E. Niles (16-2/3 acres)	50/480 ths.
	Eva Parker, nee Niles (13-1/3 acres)	40/480 ths.
	J. D. Davis (10 acres)	10/160 ths.
	Lucy E. Davis (10 acres)	10/160 ths.
	M. M. Davis (10 acres)	10/160 ths.
Number 46	Oza Medrano (26-2/3 acres)	80/480 ths.
	Oza Medrano, Guardian (26-2/3 acres)	80/480 ths.
Number- 47 & 48	Lewis L. Edwards	40/80 ths.
Number 49	L. L. Edwards (13-1/3 acres)	13-1/3/40 ths.
	Jasper Edwards (4.444 acres)	4.444/40 ths.
	Ted R. Edwards (4.444 acres)	4.444/40 ths.
	Josophens Welch (4.444 acres)	4.444/40 ths.
	Clinton Edwards (4.444 acres)	4.444/40 ths.
	Jessie Mullinax (4.444 acres)	4.444/40 ths.
	Opal Coon (4.444 acres)	4.444/40 ths.
Number 51	E. M. Rowe Estate, by Wayne Rowe, Adm (Mae M. Rowe, Wanne Rowe & Edith Weidge)	all mineral or 120 acres
[fol. 996]		
Number 52	Carrie C. Dixon (2½ acres)	5/16 ths.
	Offie Lindsey	97/1280 ths.
	Grace Maude Lindsey	63/1280 ths.
Number 54	L. A. Davis & Marie M. Davis	All minerals 2/20 ths.
Number 55	L. A. Davis & Marie M. Davis	All minerals except 3/4 of 1/8 royalty, all leasing rights to Davises. (This is subject to existing lease of Rookstool & Butcher) All mineral in place belongs to the Davises.
Number 56	T. B. Walker	1/2 minerals 20/40 ths.
Number 58	J. F. Ball (8-1/3 acres)	5/48 ths.
Number 60	Mary A. Farris (20 Acres)	20/160 ths.
Number 61	Mary A. Farris (20 acres)	20/160 ths.
Number 62	Mary A. Farris (20 acres)	20/160 ths.
Number 63	Mary A. Farris (20 acres)	20/160 ths.
Number- 62 & 63	L. N. Davis (60 acres)	60/80 ths.

[fols. 997-998]

Tract Number	Name	Interest
Number- 64 & 65	Winifred M. Prentice, Now Graney (40 acres)	1/4 th.
	Eugene L. Prentice (40 acres)	1/4 th.
	Maxine Ruth Prentice (40 acres)	1/4 th.
	John C. Prentice (40 acres)	1/4 th.
Number 66	Carrie C. Dixon (7-½ acres)	15/160 ths.
Number- 67, 68, 69 & 70	Ida B. Rivers	19/160 ths.
	Dorothy McClaran	19/160 ths.
	Max E. McClaran	19/160 ths.
	George A. McClaran	19/160 ths.
	Maurice McClaran	19/160 ths.
Number 57	Bob White Oil Company	5/120 ths.
	Clyde Kahle	5/120 ths.
Number 55	Clyde Kahle	1/8 of 7/8 working interest.

[File endorsement omitted.]

[fol. 999] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

C. D. No. 1308

[Title omitted]

ANSWER OF OIL AND GAS LESSORS—Filed May 21, 1947

Come now the undersigned, oil and gas lessors, and show to the Honorable Commission that they are citizens of the United States of America and are the owners of the oil, gas and other minerals lying in and under the lands hereinafter described and in the interest set opposite said descriptions. That said oil, gas and other mineral rights are under lease to the various lessees set forth in the "plan" attached to the petition herein and as appear from the original oil and gas leases on file in the office of the county clerk of Caddo County, Oklahoma, reference to which is hereby made and said record of said oil and gas leases is made a part hereof.

That said oil, gas and other mineral rights and ownership thereof is as follows:

[fol. 1000] That under the terms and conditions of said oil and gas leases, the undersigned are entitled to a portion of the oil, gas and minerals produced from their re-

spective lands in the amount set forth in their respective oil and gas leases, free of cost.

For defense to the petition the undersigned separately allege and state:

1. The undersigned deny general and singular each and every allegation contained in the petition except those herein specifically admitted.

2. For further defense, the undersigned allege that the statute of the State of Oklahoma, being Title 52, Sections 286.1 to 286.17, Oklahoma Statutes Annotated, upon which the petitioners base their application for the creation of the West Cement Medrano Unit, violates:

(a) The Fourteenth Amendment to the United States Constitution, Section 1, in that it attempts to take the propery of the undersigned without due process of law and denies to the undersigned the equal protection of the laws.

(b) The Fifth Amendment to the Constitution of the United States in that it seeks to take the property of the undersigned without due process of law and without just compensation.

(c) Article 1, Section 10 of the United States Constitution, in that said statute impairs the obligation of the contract between the undersigned lessors and the petition-[fol. 1001] ing lessees.

(d) The Fourteenth Amendment to the United States Constitution, Section 1, prohibiting abridgment of privileges and immunities of citizens of the United States.

(e) Article 2, Section 6 of the Constitution of Oklahoma, in that it seeks to deprive the undersigned of their property without due process of law.

(f) Article 2, Section 15 of the Constitution of the State of Oklahoma, in that it impairs the obligation of the contract between the undersigned lessors and the petitioning lessees.

(g) Article 5, Section 51 of the Constitution of the State of Oklahoma, in that said law grants to an association, corporation or individual exclusive rights, privileges and immunities within the State of Oklahoma.

(h) Article 2, Section 24 of the Constitution of the State of Oklahoma, in that said law seeks to take private prop-

erty without just compensation and seeks to ascertain said compensation without a board of commissioners of no less than three freeholders, and fails to provide that any party aggrieved by the fixing of said compensation shall have the right of a trial by jury in a court of record.

3. For further defense, the undersigned allege that the "plan" as set forth in the petition violates the provisions of [fol. 1002] Title 52, Section 286.5, Oklahoma Statutes Annotated, being the statute which the undersigned allege is unconstitutional, but under which the petitioners seek to take the property of and impair the contracts of the undersigned, in that said "plan" seeks to include within the proposed unit area, portions of a common source of supply which has not reasonably been defined by actual drilling operations, said areas being specifically described on the plaintiffs' exhibit A as numbered 1, 2, 3, 4, 5, 7, 16, 21, 22, the northern part of 71, 44, the northeast part of 45, 51, the northeast part of 52, 59, 60, 61, the eastern part of 62, 63, 66, 67, 68, 69, 70, 50, 33, southern part of 19, and the southern part of 6.

4. That the "plan" and method of operation proposed by the petitioners is not (1) feasible, (2) will not prevent waste and (3) will not result in the increased recovery of more oil and gas than would otherwise be recovered, or one of them, each of which conditions is requisite for the unitization of said pool as contemplated by Title 52, Section 286.3, O. S. A. of said unconstitutional statute.

5. That in allocating to each tract set out in the petitioners' "plan" its proportionate share of the oil and gas produced from the common source of supply, the petitioners have failed to comply with the directions of Title 52, Section 286.5, O. S. A. of said unconstitutional statute, in that they have failed to consider the probable productivity of [fol. 1003] oil and gas in the absence of unit operations in said area.

6. That the petitioners' "plan" violates the property rights of the undersigned for the reason that the allocations of oil to the various tracts owned by the undersigned is based on the amount of oil under said tracts before any production of oil and gas was had from said common source of supply, whereas said allocations should be based

on the amount of oil and gas underlying the lands of the undersigned either at the time of unitization or at the time said unconstitutional statute authorizing said unitization became effective, to-wit: that 26th day of May, 1945.

7. The undersigned further allege that the said "plan" is not feasible for the reason that one or more gas wells capable of producing from and producing from the common source of supply are not included in the unitization "plan" but are omitted therefrom so that the operators thereof may produce said wells without the regulation sought by the petitioners for all wells producing from the common source of supply. That such condition will result in the inability of the unit operations to maintain pressure in the common source of supply and to successfully conduct re-pressuring and re-cycling operations.

8. That the allocation of oil and gas to the undersigned as set forth in the "plan" is not just compensation for the [fol. 1004] property sought to be taken by the petitioners and is arbitrary and based on inferences based on other inferences and amounts to a guess.

9. That the petitioners have not come before the Honorable Commission with clean hands in that they have not complied with the terms and conditions expressed and implied of their oil and gas leases and are therefore not entitled to any relief in law or in equity.

10. That the petitioners have not fully developed the area sought to be unitized and therefore have not reasonably defined the portions of the common source of supply sought to be unitized and have not reasonably defined the thickness, porosity, saturation and permeability of the sand under each tract sought to be included in the unitized area, which factors are used by the petitioners in determining the amount of oil and gas allocated as compensation for each tract which the petitioners seek to take. That the spacing order of the Honorable Commission applicable to the oil wells in the proposed unitized area is substantially ten acre spacing and that it is apparent from the petition that there is far less than one well to the ten acre unit and that there is no uniform spacing plan either in the oil or gas area, and that the tracts sought to be taken have not been fully developed and that the lease contracts sought

to be impaired have not been fully complied with by the [fol. 1005] petitioners nor does the "plan" provide for such compliance.

11. That neither the "plan" nor the statute under which the petitioners seek to proceed provide that the unit operator shall produce and market the oil and gas produced from the lands of the lessors and that the failure to so provide is inequitable and that such provision should be made by law and the order of the Commission.

12. The undersigned further allege that Title 52, Section 286.1 to 286.17, Oklahoma Statutes Annotated, was prepared and written by the legal force or legal forces of one or more of the petitioners and was sponsored through the legislature of the State of Oklahoma by one or more of said petitioners and that the primary object of said statute is not the conservation of oil and gas but is the reduction of development and operating expenses of oil and gas leasehold estates to the petitioners and persons engaged in like businesses. That such reduction is to be effected by a wider spacing of the wells, hence a smaller cost of development and by the use of the gas in the reservoir for the production of oil rather than the use of the ordinary pumping unit which results in a much smaller operating expense to the petitioners and other lessees. That at the time the oil and gas leases were executed by the undersigned to the petitioners, or their predecessors in title, it was contemplated by the parties that in case oil or [fol. 1006] gas was discovered that said leasehold estates would be developed and operated in accordance with the methods now in use in said pool and in accordance with the laws requiring such development and production and marketing of the oil and gas then in effect and that the royalty oil and gas reserved to the lessors was made in accordance therewith. That in the event the lessees are permitted to unitize said pool and develop and operate said oil and gas leasehold estates contrary to the law in force at the time said leases were executed and contrary to the terms and implied covenants of said leases, that the royalty oil and gas provisions of said leases should be increased in proportion to the decreased cost of development and operation to the lessees and that to do otherwise would

deprive the lessors of valuable contractual rights and relieve the lessees of substantial contractual obligation without compensation to the lessors. And the undersigned further allege that if the Medrano pool is produced under the present methods and without unitization until the oil and gas producible therefrom has been exhausted so far as it is producible by the methods now in use, then secondary recovery methods may be applied, such as re-pressuring, recycling and water flooding operations, and oil and gas can be produced thereby so that the total of said oil and gas produced under present methods and produced under secondary recovery methods will substantially equal the oil [fols. 1007-1008] and gas which the petitioners propose to recover under the unit operation, but that the cost to the operators will be much greater. This operating cost was contemplated by the parties when the leases were made and the royalty provided therein to the lessor fixed accordingly. Premises considered, the undersigned allege that the lessees should not be relieved of their obligations to pay the greater cost of production and operation without just and proper compensation to the lessors.

Wherefore, the undersigned pray that the petition herein be denied and that in the event an order is made unitizing the area described in the petition or any part thereof, that the separate apportionment of oil and gas be increased and fixed in accordance with the rules of law and equity and for such other and further relief as may be proper in the premises.

/s/ Reford Bond, Jr., of Hatcher & Bond, Chickasha, Oklahoma, Attorney for all of the above named lessors.

[File endorsement omitted.]

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Vol. III

TRANSCRIPT OF RECORD

(Pages 821 to 1344)

Supreme Court of the United States

OCTOBER TERM, 1951

No. 301

THE PALMER OIL CORPORATION, PAUL STERBA AND PAUL STERBA, JR., A MINOR, ETC., APPELLANTS,

vs.

AMERADA PETROLEUM CORPORATION, ET AL.

No. 302

KIT C. FARWELL, FRANK PHOHLEMANN, L. A. DAVIS, ET AL., APPELLANTS,

vs.

AMERADA PETROLEUM CORPORATION, ET AL.

APPEALS FROM THE SUPREME COURT OF THE STATE OF OKLAHOMA

FILED SEPTEMBER 4, 1951

PROBABLE JURISDICTION NOTED JANUARY 14, 1952

SUPREME COURT OF THE UNITED STATES

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APPEALS FROM THE SUPREME COURT OF THE STATE OF OKLAHOMA

VOL. III

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JUDD & DETWEILER (INC.), PRINTERS, WASHINGTON, D.C., MARCH 3, 1952.

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[fol. 1009] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title omitted]

C. D. No. 1308

ANSWER OF TOM POTTER—Filed May 21, 1947

Comes now Tom Potter and shows to the Honorable Commission that he is a citizen of the United States of America and is the owner of an oil and gas leasehold estate covering the following described land situated in Caddo County, State of Oklahoma, to-wit:

> The West Half (W½) of the Northeast Quarter (NE¼) of the Northeast Quarter (NE¼) of Section 1, Township 5 North, Range 10 West, of the I. M., containing 20 acres, more or less,

and that the respondent has completed, on said property, a gas well to the depth of approximately 6,000 feet, at a cost and expense of approximately $80,000.00. That there has never been an order of the Honorable Commission classifying said well and determining the sand in which said well is completed, that respondent does not know in what sand said well is completed and asks that the Commission determine said sand, and that the petitioners herein seek to include said oil and gas leasehold estate in the plan of unitization set forth in said petition.

[fol. 1010] For defense to the petition, the respondent alleges and states:

1. The respondent denies general and singular each and every allegation contained in the petition, except those herein specifically admitted.

2. For further defense, the respondent alleges that the statute of the State of Oklahoma, being Title 52, Sections 286.1 to 286.17, Oklahoma Statutes Annotated, upon which the petitioners base their application for the creation of the West Cement Medrano Unit, violates:

(a) The Fourteenth Amendment to the United States Constitution, Section 1, in that it attempts to take the

property of the respondent without due process of law and denies to the respondent the equal protection of the laws.

(b) The Fifth Amendment to the Constitution of the United States in that it seeks to take the property of the respondent without due process of law and without just compensation.

(c) Article 1, Section 10 of the United States Constitution, in that said statute impairs the obligation of the contract between the respondent and the lessors, from whom he holds his oil and gas leasehold estate.

(d) The Fourteenth Amendment to the United States Constitution, Section 1, prohibiting abridgment of privileges [fol. 1011] and immunities of citizens of the United States.

(e) Article 2, Section 6 of the Constitution of Oklahoma, in that it seeks to deprive the respondent of his property without due process of law.

(f) Article 2, Section 15 of the Constitution of the State of Oklahoma, in that it impairs the obligation of the contract between the respondent and the lessors, from whom the respondent holds his oil and gas leasehold estate.

(g) Article 5, Section 51 of the Constitution of the State of Oklahoma, in that said law grants to an association, corporation or individual exclusive rights, privileges and immunities within the State of Oklahoma.

(h) Article 2, Section 24 of the Constitution of the State of Oklahoma, in that said law seeks to take private property without just compensation and seeks to ascertain said compensation without a board of commissioners of no less than three free-holders, and fails to provide that any party aggrieved by the fixing of said compensation shall have the right of a trial by jury in a court of record.

3. For further defense, the respondent alleges that the "plan" as set forth in the petition violates the provisions of Title 52, Section 286.5, Oklahoma Statutes Annotated, being the statute which the respondent alleges is unconstitutional, but under which the petitioners seek to take [fol. 1012] the property of and impair the contract of the respondent, in that said "plan" seeks to include within the proposed unit area, portions of a common source of supply which has not reasonably been defined by actual drill-

ing operations, said areas being specifically described on the plaintiffs' exhibit A as numbered 1, 2, 3, 4, 5, 7, 16, 21, 22, the northern part of 71, 44, the northeast part of 45, 51, the northeast part of 52, 59, 60, 61, the eastern part of 62, 63, 66, 67, 68, 70, 50, 33, the southern part of 19, and the southern part of 6.

4. That the "plan" and method of operation proposed by the petitioners is not (1) feasible, (2) will not prevent waste and (3) will not result in the increased recovery of more oil and gas than would otherwise be recovered, or one of them, each of which conditions is requisite for the unitization of said pool as contemplated by Title 52, Section 286.3, O. S. A. of said unconstitutional statute.

5. That in allocating to each tract set out in the petitioners' "plan" its proportionate share of the oil and gas produced from the common source of supply, the petitioners have failed to comply with the directions of Title 52, Section 286.5, O. S. A. of said unconstitutional statute, in that they have failed to consider the probable productivity of oil and gas in the absence of unit operations in said [fol. 1013] area.

6. That the petitioners' "plan" violates the property rights of the respondent for the reason that the allocations of oil to the tract owned by the respondent is based on the amount of oil under said tract before any production of oil and gas was had from said common source of supply, whereas said allocations should be based on the amount of oil and gas underlying the land of the respondent either at the time of unitization or at the time said unconstitutional statute authorizing said unitization became effective, to-wit: the 26th day of May, 1945.

7. The respondent further alleges that the said "plan" is not feasible for the reason that one or more gas wells capable of producing from and producing from the common source of supply are not included in the unitization "plan" but are omitted therefrom so that the operators thereof may produce said wells without the regulation sought by the petitioners for all wells producing from the common source of supply. That such condition will result in the inability of the unit operations to maintain pressure in the

common source of supply and to successfully conduct repressuring and re-cycling operations.

8. That the allocation of oil and gas to the respondent as set forth in the "plan" is not just compensation for the property sought to be taken by the petitioners and is arbitrary and based on inferences based on other inferences [fol. 1014] and amounts to a guess.

9. That the petitioners have not come before the Honorable Commission with clean hands in that they have not complied with the terms and conditions expressed and implied of their oil and gas leases and are therefore not entitled to any relief in law or in equity.

10. That the petitioners have not fully developed the area sought to be unitized and therefore have not reasonably defined the portions of the common source of supply sought to be unitized and have not reasonably defined the thickness, porosity, saturation and permeability of the sand under each tract sought to be included in the unitized area, which factors are used by the petitioners in determining the amount of oil and gas allocated as compensation for each tract which the petitioners seek to take. That the spacing order of the Honorable Commission applicable to the oil wells in the proposed unitized area is substantially ten acre spacing and that it is apparent from the petition that there is far less than one well to the ten acre unit and that there is no uniform spacing plan either in the oil or gas area, and that the tracts sought to be taken have not been fully developed and that the lease contract sought to be impaired has not been fully complied with by the petitioners nor does the "plan" provide for such compliance. [fol. 1015] 11. That neither the "plan" nor the statute under which the petitioners seek to proceed provide that the unit operator shall produce and market the oil and gas produced from the land of the lessor and that the failure to so provide is inequitable and that such provision should be made by law and the order of the Commission.

12. Respondent for further defense, if need be, alleges that in the event the Honorable Commission classifies the well on this respondent's leasehold as a gas well and determines that the well is completed in the Medrano common source of supply, then and in that event, the respond-

ent alleges that he desires to deepen said well to the Kissler sand, or some other productive sand below the Medrano sand, taking care to protect the Medrano sand against injury, in accordance with the recognized and approved engineering methods of drilling through and past a producing oil and gas horizen in a common source of supply. That other wells have been heretofore completed in the Medrano common source of supply and have been, by the order of this Honorable Commission, deepened to productive horizons below the Medrano common source of supply, and this respondent therefore alleges that he believes that he is entitled to a similar order to so deepen the said well on his oil and gas leasehold estate.

Wherefore, the respondent, having fully answered the [fols. 1016-1017] petition herein, prays that the Honorable Commission deny the petition and that the well located on the respondent's leasehold be classified and an order entered determining the sand in which said well is completed, and in the event it is ordered that said well is completed in the Medrano common source of supply, that a further order be entered permitting the respondent to deepen said well, using care for the protection of the Medrano sand and such other order as may be equitable and proper in the premises.

/s/ Reford Bond, Jr., of Hatcher & Bond, Chickasha, Oklahoma, Attorney for Tom Potter.

[File endorsement omitted.]

[fol. 1018] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title omitted]

RESPONSE OF CLYDE KAHLE, ET AL.—Filed May 21, 1947

Come now Clyde Kahle and Maud Kahle, husband and wife, and Bob White Oil & Gas Company, and separately show to the Honorable Commission that they are citizens of the United States of America and are the owners of over-

riding royalties in the following described oil and gas leasehold estates, to-wit:

1. Clyde Kahle and Maud Kahle are the owners of an undivided 1/16 of 7/8 O. R. R. in and to the oil and gas leasehold estate covering the North 25 acres of the Southeast Quarter of the Northeast Quarter of Section 1, Township 5 North, Range 10 West, Caddo County, State of Oklahoma, below the depth of 2,500 feet, which tract of land has been consolidated with the South 15 acres of the said Southeast Quarter of the Northeast Quarter by a written agreement under the terms of which Maud Kahle and Clyde Kahle take that portion of the oil and gas produced from said land in the proportionate share which their interest in said 25 acres bears to the entire interest in the entire [fol. 1019] tract.

2. The Bob White Oil & Gas Company owns an undivided 1/16 of 7/8 O. R. R. in and to the oil and gas leasehold estate covering the North 25 acres of the Southeast Quarter of the Northeast Quarter of Section 1, Township 5 North, Range 10 West, Caddo County, State of Oklahoma, below the depth of 2500 feet, which interest has been consolidated with the same property and in the same manner as the interest herein above set forth in paragraph 1.

3. Clyde Kahle is the owner of an undivided 1/8 of 7/8 O. R. R. in and to the oil and gas leasehold estate covering the East Half of the Northeast Quarter of the Northeast Quarter of Section 1, Township 5 North, Range 10 West, Caddo County, State of Oklahoma, below the depth of 2500 feet.

For defense to the petition, the respondents separately allege and state:

1. The Respondents deny general and singular each and every allegation contained in the petition, except those herein specifically admitted.

2. For further defense, the respondents allege that the statute of the State of Oklahoma, being Title 52, Sections 286.1 to 286.17, Oklahoma Statutes Annotated, upon which the petitioners base their application for the creation of the West Cement Medrano Unit, violates:

[fol. 1020] (a) The Fourteenth Amendment to the United States Constitution, Section 1, in that it attempts to take the property of the respondents without due process of law and denies to the respondents the equal protection of the laws.

(b) The Fifth Amendment to the Constitution of the United States in that it seeks to take the property of the respondents without due process of law and without just compensation.

(c) Article 1, Section 10 of the United States Constitution, in that said statute impairs the obligation of the contract between the respondents and the lessors, from whom they hold their oil and gas leasehold estates.

(d) The Fourteenth Amendment to the United States Constitution, Section 1, prohibiting abridgment of privileges and immunities of citizens of the United States.

(e) Article 2, Section 6 of the Constitution of Oklahoma, in that it seeks to deprive the respondents of their property without due process of law.

(f) Article 2, Section 15 of the Constitution of the State of Oklahoma, in that it impairs the obligation of the contract between the respondents and the lessors, from whom the respondents hold their oil and gas leasehold estates.

(g) Article 5, Section 51 of the Constitution of the State of Oklahoma, in that said law grants to an association, corporation or individual exclusive rights, privileges and [fol. 1021] immunities within the State of Oklahoma.

(h) Article 2, Section 25 of the Constitution of the State of Oklahoma, in that said law seeks to take private property without just compensation and seeks to ascertain said compensation without a board of commissioners of no less than three freeholders, and fails to provide that any party aggrieved by the fixing of said compensation shall have the right of a trial by jury in a court of record.

3. For further defense, the respondents allege that the "plan" as set forth in the petition violates the provisions of Title 52, Section 286.5, Oklahoma Statutes Annotated, being the statute which the respondents allege is unconstitutional, but under which the petitioners seek to take the property of and impair the contract of the respondents, in that said "plan" seeks to include within the proposed unit

area, portions of a common source of supply which has not reasonably been defined by actual drilling operations, said areas being specifically described on the plaintiffs' exhibit A as numbered 1, 2, 3, 4, 5, 7, 16, 21, 22, the northern part of 71, 44, the northeast part of 45, 51, the northeast part of 52, 59, 60, 61, the eastern part of 62, 63, 66, 67, 68, 69, 70, 50, 33, the southern part of 19, and the southern part of 6.

[fol. 1022] 4. That the "plan" and method of operation proposed by the petitioners is not (1) feasible, (2) will not prevent waste and (3) will not result in the increased recovery of more oil and gas than would otherwise be recovered, or one of them, each of which conditions is requisite for the unitization of said pool as contemplated by Title 52, Section 286.3, O. S. A. of said unconstitutional statute.

5. That in allocating to each tract set out in the petitioners' "plan" its proportionate share of the oil and gas produced from the common source of supply, the petitioners have failed to comply with the directions of Title 52, Section 286.5, O. S. A. of said unconstitutional statute, in that they have failed to consider the probable productivity of oil and gas in the absence of unit operations in said area.

6. That the petitioners' "plan" violates the property rights of the respondents for the reason that the allocations of oil to the tracts owned by the respondents is based on the amount of oil under said tracts before any production of oil and gas was had from said common source of supply, whereas said allocations should be based on the amount of oil and gas underlying the land of the respondents either at the time of unitization or at the time said unconstitutional statute authorizing said unitization became effective, to-wit: the 26th day of May, 1945.

[fol. 1023] 7. The respondents further allege that the said "plan" is not feasible for the reason that one or more gas wells capable of producing from and producing from the common source of supply are not included in the unitization "plan" but are omitted therefrom so that the operators thereof may produce said wells without the regulation sought by the petitioners for all wells producing from the common source of supply. That such condition will

result in the inability of the unit operations to maintain pressure in the common source of supply and to successfully conduct re-pressuring and re-cycling operations.

8. That the allocation of oil and gas to the respondents as set forth in the "plan" is not just compensation for the property sought to be taken by the petitioners and is arbitrary and based on inferences based on other inferences and amounts to a guess.

9. That the petitioners have not come before the Honorable Commission with clean hands in that they have not complied with the terms and conditions expressed and implied of their oil and gas leases and are therefore not entitled to any relief in law or in equity.

10. That the petitioners have not fully developed the area sought to be unitized and therefore have not reasonably defined the portions of the common source of supply sought to be unitized and have not reasonably defined the thickness, porosity, saturation and permeability of the [fol. 1024] sand under each tract sought to be included in the unitized area, which factors are used by the petitioners in determining the amount of oil and gas allocated as compensation for each tract which the petitioners seek to take. That the spacing order of the Honorable Commission applicable to the oil wells in the proposed unitized area is substantially ten acre spacing and that it is apparent from the petition that there is far less than one well to the ten acre unit and that there is no uniform spacing plan either in the oil or gas area, and that the tracts sought to be taken have not been fully developed and that the lease contract sought to be impaired has not been fully complied with by the petitioners nor does the "plan" provide for such compliance.

11. That neither the "plan" nor the statute under which the petitioners seek to proceed provide that the unit operator shall produce and market the oil and gas produced from the land of the lessor and that the failure to so provide is inequitable and that such provision should be made by law and order of the Commission

12. Respondents, for further defense, allege that the "plan" and the unconstitutional statute hereinabove pled

seeks to take and to destroy the interest of the respondents without any compensation whatsoever in that it provides that when the operating expense of the proposed unit [fol. 1025] equals the proceeds from 7/8 of the oil and gas produced less the proceeds from all outstanding over-riding oil and gas royalties or payments, that then said over-riding royalties shall become the property of the petitioners. That under the law in force at the time, the O. R. R. of the respondents was created by written agreements duly recorded in book 95 at page 5 and book 95 at page 7 of the records of Caddo County, Oklahoma, which record is hereby referred to and made a part hereof, the oil and gas leases from which said over-riding royalties were carved or created would expire when the cost of operation exceeded the proceeds of oil and gas received by the lessee. That the petitioning lessees seek to extend the time of their leases by taking, without compensation, the over-riding royalties of these protestants. That the petitioning lessees seek to relieve themselves of burdensome contractual obligations to the protestants to-wit: the payment of the over-riding royalties, without compensation and further seek to deprive these protestants of valuable contractual rights and property, to-wit: the said over-riding royalties, without compensation of any kind.

Wherefore, the respondents having fully answered the petition herein, pray that the Honorable Commission deny the petition and in the event the petition be not denied, [fol. 1026] that the respondents have such compensation for their property as may be equitable and just under the law and the constitution of the United States and the State of Oklahoma.

/s/ Reford Bond, Jr., of Hatcher & Bond, Chickasha, Oklahoma, attorney for Maud Kahle, Clyde Kahle and Bob White Oil & Gas Company.

[File endorsement omitted.]

[fol. 1026a]

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA, MAY 22, 1947, AT 10:00 A. M.

[fol. 1027] **Transcript of Hearing**

Q. Mr. Wood, did you make a calculation of the surface area only, as shown by the Geological outlines of Exhibit 24?

A. May I see Exhibit 24? (Counsel hands witness Exhibit 24) Exhibit 81 appears to be the same as Exhibit 24. In answer to your question, I would say that I have made the calculation.

Q. I'll ask you what is the difference between the Hachured line, what is the difference between the outline and the Hachured line?

A. The difference in acreage, as shown by the Hachured lines on Exhibit 24, as compared with the Geological outline, is, of the surface area, 521.34.

Q. Now, the percentage of surface area, is that with relation to the Geological outline and not to the Hachured line?

A. In answer, I will say I gave the percentage of both areas in my testimony.

Q. In your previous testimony where you referred to the Unit area, you had reference to the Hachured line, as shown on Exhibit 24?

A. I believe that is correct.

Q. And where you referred to the reservoir area, you referred to the Geologically drawn line?

A. That's right.

Q. Now, refer to Exhibit 24,—will you please refer to the line drawn near to the bottom of that Exhibit, within the Hachured line, which, I believe, you referred to as constituting the south boundary of the geological area,— [fol. 1028] do you find the line to which I refer?

A. As I understand your question, the line on the South and West, which would be the lower portion of the area but generally above the Hachured line is the limit of the area as defined by this Exhibit, on this Exhibit.

Q. Now, with relation to that line, which will be here-

after referred to as the South Geological line, do you notice some sharp breaks in that line?

A. That line has some changes in direction, which would appear to be rather sharp.

Q. Do you know what that refers to?

Counsel for Protestant: Objected to as incompetent, irrevelant, immaterial and improper cross examination.

Chairman Bond: The witness may confine his testimony to the acreage, if this is a line that fixes acreage, and he may be cross examined on it,—if it is some geological matter——

Mr. Williams: May I ask the witness a question?

Q. Did you draw that line?

A. I did not.

Q. Do you know who did draw that line?

A. I do.

Q. Who?

A. It was drawn by a draftsman in the employ of the Phillips Petroleum Company.

Q. Did you, on direct examination, testify why that line [fol. 1029] was drawn where it was?

A. I believe I testified it was drawn there to indicate the geological area.

Q. Did you determine the geological area?

A. No.

Examination by Mr. Adams:

Q. Did you do this work or supervise it?

A. I think this was drawn under the supervision of Mr. Kaveler, the drawing of the geological outline.

Q. I believe you say it was drawn under the supervision of Mr. Kaveler?

A. That's my understanding.

Q. Then, you didn't participate in that work?

A. Only in so far as furnishing the material for the draftsman to use.

Q. He followed the information which you gave him?

A. He followed the information shown on the geological outline, I believe, the material furnished him.

Examination by Mr. Williams:

Q. Was that material your own material or was it material you had obtained from the geologist?

A. It was material furnished by me.

Q. Now, you say you computed the surface area,—you didn't mean to advise the Commission or to confuse the [fol. 1030] Commission by saying that anything you had done was to bring about greater ultimate recovery,—what did you mean by that, by saying that work was done with the idea of promoting more efficient production and greater ultimate recovery?

A. I believe the record shows that I qualified myself as a witness by reason of my work that I have done for Phillips Petroleum Company during the time that I have been an Engineer, the work I have done as an Engineer on various——

Q. Well, I don't believe you are answering my question,—you wouldn't have to make any study of this field in respect to this area as to greater ultimate recovery if you were merely going to make a computation of acreage, as shown on Exhibit 24, would you?

A. I don't think I said that was the extent of the work.

Q. What did you mean when you said "24".

A. I have worked with the Engineering Committee and on greater ultimate recovery and I have rendered a report of the results of our work.

Q. What do you mean by that?

Mr. Williams: If the Commission please, I think the record speaks for itself,—when this witness was called I stated and I read from the record, "Mr. Williams May I say to the Commission, I am introducing this witness from a statistical standpoint, he is familiar with the Exhibits introduced and I have asked him to calculate the ownership of the parties interested and this is to be purely statistical [fol. 1031] information and I examined the Witness as follows, Q. You may state your name. A. Gilbert Wood, Jr.

Q. Are you associated with Phillips Petroleum Company.

A. Yes.

Q. What capacity?

A. Petroleum Engineer.

Q. Where do you live?

A. Bartlesville, Oklahoma.

Q. How long have you been associated with them?

A. Seven years.

Q. What connection have you had with the Cement Medrano pool preparatory to the filing of this application?

A. A good bit of night time for the past two years studying the Medrano pool and during the last year and a half I worked actually with the Engineering Committee, all with the idea of more efficient production and greater ultimate recovery, and we have written a report from the results, as to the results of our Engineering work at the request of the operating Committee.

Q. As a part of that study, you have made a study of the various operators and leases in the pools and locations of the leases?

A. Yes.

Q. And the leases that were introduced here today?

[fol. 1032] A. Yes.

Q. Have you made, at my request, a calculation as to the acreage within the area shown on Exhibit 24, namely the acreage within the proposed Unit area, also the separate calculation as to the geological outlines as shown on that Exhibit?

A. That is correct."

Now he was asked, this witness was asked those questions, and he gave those answers, then, from there on out the questions were as to the study that he had made of the pool and he testified in answer to those questions as to the study he had made of the pool on the particular matter concerning which he was questioned.

Chairman Bond: The Commission is of the opinion that this witness' testimony must be limited, but since he made the statement that he did make, Counsel may ask him why he made it.

Mr. Adams: If the Commission please, I think we have the right to test his qualifications,—he said he had made, as an Engineer, a report.

Chairman Bond: You may test his qualifications for this particular purpose, if you desire.

Examination by Mr. Adams:

Q. Mr. Wood, will you state in what capacity you performed as a member of the Engineering Committee in the study of this field.

[fol. 1033] Mr. Williams: We object to that as not a proper question.

Chairman Bond: The Commission will permit you to inquire what his capacity was, but there will be no cross examination unless you make it proper,—unless you want to make him your own witness.

Mr. Adams: Note our exceptions.

[fol. 1034] By Mr. Adams:

Q. Did you make a computation of the surface area with respect to the property rights of each of the operators within the separate segments?

By Mr. Williams:

You mean of,—by property rights lease ownership?

By Mr. Adams:

Yes.

A. I made a computation of the surface area within the pool as shown by the Hacherd lines as well as the geological boundaries on this Exhibit.

By Mr. Adams:

Q. Perhaps you didn't understand my question?

A. The Answer is no, if you are talking about something else.

Q. You didn't then make an area determination of the property rights within each of the separate segments?

A. No.

Q. From your experience and study you could *you* make such a computation?

A. It would be a very simple matter for anyone to make these lines designated as separating various areas of this map and make such a computation. I could do so, yes sir.

Q. How long would it take you to make such computation?

A. Well, that is rather difficulf to say with any exactitude, but it might take a few hours, and it might take several days, I am not sure.

Q. Don't you have that information pretty readily available in this engineer's report?

A. I don't believe we do.

[fol. 1035] Q. If we recall you, would you in the interim attempt to make such computation for us?

By Mr. Williams:

I think we ought to know the purpose of this request.

By Chairman Bond:

You will soon out the purpose of this request because the Commission will make a ruling *that* this time. This witness testified to the boundaries of the entire plan, the entire tract. He didn't testify as to the boundary of the segments. Now if you think there is something wrong under each segment, you can show it, you can convince the Commission it is incorrect, the Commission will permit you to show it regardless of the time it takes to make the calculation and examine and testify. Unless there is something wrong, unless the titles of parties has been mistaken, no man can be hurt by it. If you have the information that the titles, segments are incorrect, the Commission will give you ample time to correct them, but now the Commission is only concerned with the boundaries to the entire Plan.

By Mr. Adams:

Q. I believe you previously testified that with respect to the Sterba lease, you allocated in your computation 50 per cent of the surface area to the Palmer Oil Corporation and 50 per cent to the Gulf Oil Corporation, is that correct?

[fol. 1036] A. That is correct.

Q. You know or do you know that there has been no wells drilled into the Medrano sand on the Sterba lease where the Medrano has been encountered at a depth greater than 6000 feet?

A. To my knowledge, there has,—that is correct.

Q. Is there anything on Exhibit 24 that reflected the Medrano Oil sand as being at a greater depth than 6000 feet in the Sterba lease?

By Mr. Williams:

We object to that as incompetent irrelevant and immaterial and improper cross examination.

By Chairman Bond:

It isn't improper cross examination, he didn't testify to the depth of any sand in his statement.

By Mr. Williams: May I say frankly to the Commission in regard to the split of areage on the Sterba lease, the Witness is testifying purely from a statistical standpoint and the Applicant makes no point as to how that acreage has been split, if this is the purpose. It is merely an attempt to show that the Applicants hold more than 50 per cent. leases and more than 50 per cent of the area. The Gulf Company with whom Palmer has a dispute over the Sterba lease is one of the Applicants. The contacts are here in evidence, [fol. 1037] even if Gulf is not entitled to any of the acreage in that calculation it makes no difference to our position—he can split it as he pleases. It makes no difference to the applicant.

By Chairman Bond: If the division of these segments should cause inequities to the title owner or cause any injustice to parties who own leases and royalty there, the Commission desires that testimony, but this testimony must be confined under the law to proper cross examination and would have to be proven by some other witness unless you want to make this witness your witness, if your witness, you can prove anything.

By Mr. Williams: This is merely a splitting of the acreage on the Sterba lease and the contracts are in evidence. The witness said split it 50-50. If that is a wrong split, Counsel can split it as he pleases,—it is a 160 acre lease and the contracts are in evidence,—he said for his calculations he made it 50-50 split, and as I say the Applicant don't think it is material one way or the other for any purpose.

By Mr. Adams: If the Commission will hold that we are not controlled in any respect by the witnesses splitting the Sterba area, I mean the Sterba lease, 50 per cent to Palmer [fol. 1038] Oil Corporation and 50 per cent to the Gulf Oil Corporation why we will of course,——

By Chairman Bond: The Commission isn't going to make any holding at this time. When the Commission hears all the testimony and all the law in this case, the Commission will then hold a Conference and will then write its opinion. The Commission is handing down no opinions in this case now, it is simply ruling on testimony. Now, if this Witness has done, works an injustice on any of the property owners or any of the royalty owners, a segregation of those titles is an inequitable segregation to someone you can show that.

By Mr. Adams: We would like to call the Witness' attention to Exhibit 24 and ask the witness to state if any information shown on such exhibit justifying in his opinion the allocation to the Gulf Oil Corporation, to any of the surface area above oil production should be allocated to the Gulf Oil Corporation on the Sterba lease.

By Judge Lowe: The evidence in the case will show that the exhibits on file, that the Gulf Oil Corporation had a lease covering this Sterba 160. We assigned the gas rights and oil rights down to 6000 feet and retained the oil and gas [fol. 1039] minerals below 6000 feet so each of us had the right to use the entire surface,—we to drill below 6000 feet and Mr. Palmer to drill down to 6000 feet, so it would give each one 160 acres no difference so far as this map is concerned.

By Chairman Bond: Did this witness use that knowledge in fixing the boundary to this area?

By the Witness: That was my understanding, not the boundary.

Chairman Bond: In making this segregation here?

A. Yes sir.

Chairman Bond: You didn't fix the boundaries to segments, fix the boundaries to the entire tract?

A. That is correct.

Q. If you used this knowledge in your action there, you can state that.

A. Counsel has just explained the basis for the termination of the division as between Gulf Oil Corporation and Palmer Oil Company on the 160 acres Sterba tract and on that basis the division was made as between the two lessees.

By Mr. Adams:

Q. You are talking about surface rights?
A. That is correct, that is all I have talked about.
Q. That is all.

(Witness Excused.)

[fol. 1040] Dr. Eugene A. Stephenson, a witness called and being sworn, testified in answer to the interrogatories propounded as follows:

Direct examination

By Mr. Williams:

Q. You may state your name.
A. Dr. Eugene A. Stephenson.
Q. Where do you live?
A. Lawrence, Kansas.
Q. What is your business or profession?
A. I am head of the Department of Petroleum Engineering in the school of Engineering at the University of Kansas.
Q. State briefly, Doctor, the Colleges in which you obtained your education preparatory to that profession?
A. I first graduated at Adrian College at Adrian, Michigan with a degree of Bachelor of Science, later I went to the University of Chicago where I took my Doctor's degree in 1915.
Q. In what particular field was your work connection with the procurement of your Bachelor's degree?
A. I specialized in chemistry and economic geology.
Q. Are you a member of any Engineering societies?
A. I am a member of the American Institute of Mining and Metallurgical Engineers for 31 years, of the Society of Sigma Si, Research Scientific Society, a member of the Kansas Academy of Science, that is an American Associa-

tion for the advancement of Science, Kansas Engineering Society, I believe there are some more, but I don't remember offhand what they are.

[fol. 1041] Q. Are all of those societies that have to do with the science of petroleum engineering?

A. Not altogether, some of them are purely scientific societies.

Q. Doctor, what has been your professional experience in the field of petroleum engineering of operated fields?

A. After graduating from the University of Chicago in 1915, I taught Petroleum Geology there for two years. I then became Chief Engineer and Geologist for the South Penn Oil Company of Pittsburgh, Pennsylvania, a position which I held for eight years, or until 1925. In 1925 I joined the engineering organization of Ralph E. Davis, Inc., and was Vice President of that organization for five years. I then gave up my association with Mr. Davis and in 1930 accepted the position as head of the Department of Petroleum Engineering at the Missouri School of Mines and Metallurgy at Rola, Missouri. In 1937 I accepted the position as head of the Department of Petroleum Engineering at the University of Kansas, the position which I now hold.

Q. During your period of teaching Doctor, have you also engaged in Consulting work?

A. I have.

Q. To what extent?

A. Well, that's very—at various times during the 17 years of teaching experience I have served as Consulting Engineer, I cannot give all the companies, some are listed as follows, Atlantic Oil & Producing Company, Carter Oil Company, Deep Rock Oil Company, The Gulf Oil Corporation, [fol. 1042] Shell Oil Corporation, Dancinger Oil & Refining Company, The Electric Bond & Share Company, The Union Producing Company now of Shreveport, the Texas Company, The Phillips Petroleum Company, and The Sinclair Oil Company.

Q. Have you had any connections with the Inter-State Oil Compact Commission?

A. I am the Kansas representative of the Engineering Committee for the Inter State Oil Compact Commission.

Q. During your period of teaching and your consulting

work what has been the nature of your work, has there been any particular field which you have specialized or given special thought to?

A. Well, it has been quite varied but I believe I have devoted more time that we designate as a reservoir engineering problem than to almost any other phase of petroleum engineering.

Q. Does that phase of engineering include studies of unitization, pressure maintenance and repressuring, pressure control and such subjects as I have named?

A. In part, yes, sir.

Q. Can you briefly name some of the fields, Doctor, in which you have made studies or done consulting work with which you are familiar?

A. The Panhandle Oil & Gas field of Texas, the Rodessa Field of Texas and Louisiana together, the Mexia Field of Texas, the Big Lake Field of Texas, the Carthage Field of Texas, I think that goes over into Louisiana also, the [fol. 1043] Refugio Oil & Gas Field of Texas. The White Point Field of , the Augdulce Field, the Government Wells Field, the Pledger Field, the East Texas Field, the Yates Field, I believe that is all I can think of at the present time. In Oklahoma South Burbank area, the Healdton Field, the Cushing Field, the Tonkawa Field, the West Edmond Field, the Oklahoma City Field, The Seminole, The Sayre.

Q. Make any study of the West Cement?

A. Just a moment there are a number of small fields in the vicinity of Duncan, Oklahoma I have examined but I don't recall their particular names, West Cement, there is one down near Ada named Fitts pool, that I believe that is the most of them in Oklahoma. In Arkansas, the McCamey Field, the Schuler Field, and the Smackover Field, the Midway Field, and some gas fields in the vicinity of Ft. Smith. In Louisiana the Rodessa, that was given as Louisiana and Texas, the Elm Grove, Monroe, Richland, Cotton Valley, Haneyville, Waskoma, Jennings, Roanoke, Gibson, Holly Ridge, that is all I can think of in connection with Louisiana, in New Mexico the Hobbs Field, Rattlesnake, Hogback, Artesia, there are some others, I don't remember their names, other fields in Wyoming also, Montana, Cali-

fornia, Pennsylvania, West Virginia, Kentucky and New York and Michigan.

Q. Have you published any articles dealing in oil and gas production, or oil or gas or pressure control?

A. I have.

Q. Will you name some of them?

A. One of the first publications was entitled "Decline [fol. 1044] and *and* Ultimate Production of the Ranger Field in Texas". I forgot to mention that as one of the fields I had studied. That was written jointly with H. R. Bennett, was published in 1920, as a bulletin of the American Association of Petroleum Geologists and also in the Engineering and Mining Journal for May 15, 1920. A paper on "Proration on the basis of Gas Energy" published in the transaction of the American Institute of Mining Engineers 1931. A paper on "Basic Data for Oil and Gas Leases" published in the transaction of the American Institute of Mining Engineers in 1934. A paper on "Acreage and Potential Factors in Allocation Formula" also published in the transactions of the A.I.M.E. in 1937, a paper entitled "Fundamental Operating Pressures in Oil and Gas Reservoirs" that in 1936; transactions in the A.I.M.E.—a paper on "Pressure Distribution in Oil and Gas Reservoirs" jointly with Prof. Miles of the Missouri University School of Mines and Metallurgy transaction in the A.I.M.E. in 1938. The same year in the same volume a paper entitled "Behavior of the Contents of High Pressure Reservoir". In 1938 a paper entitled "Some Consequence of Close Spacing in Kansas" published in the American Petroleum Institute Drill and Production Practices, in 1938. Another paper jointly with Mr. P. T. Amstulz entitled "Optimum producing Rates for the Wells in Arbuckle Limestone" that was published in 1944 as a bulletin of the University of Kansas Research Foundation. There are some others that I can't remember their names.

Q. Dr. Stephenson as part of your experience as a result [fol. 1045] of these studies you have made with respect to reservoir engineering, have you given any thought or have you reached any conclusion, or do you have an opinion with respect to the benefit to be gained through unitization,

pressure maintenance or repressuring operations in the operation of an oil field?

A. I don't know how to answer that question Counsel, it seems to me there are three questions in there, I don't know which one he is talking about.

Q. Let us take that question over again and separate it so the three questions will be in one question?

A. The question is still too vague to know how to answer it.

Q. We will withdraw the question, Doctor—you have an opinion as a result of your experience and study as to the benefits and advantages to be gained through unitization for the purposes of pressure maintenance and repressuring operation in connection with the operation of an oil field?

By Mr. Adams: Just a minute, we object to that question for the reason that it calls for a general conclusion of the witness and without any relation to the preoblem here before this Commission and is immaterial.

By Mr. Williams: I will connect it.

By Chairman Bond: If you assure the Commission you will connect it with the Cement Field.

By Mr. Williams: That is my purpose, sir.

By Mr. Adams: Then we add the corditions that the [fol. 1046] witness hasn't shown himself qualified to express an opinion with respect to the West Cement Field.

[fol. 1047] Doctor Stephenson is on the stand.

Mr. Williams examines the witness.

Q. I will show the witness's qualifications in that regard, it is unfortunate that you can't put all of the testimony in one question.

Chairman Bond: You are commencing backwards and qualified him, you should show what his experience is and opinions, you may proceed.

Mr. Williams: The purpose is first to show the general qualifications and then the application to the particular pool, that he has made a study of it.

Chairman Bond: I think that you have shown that he is an expert, if he is familiar with the field——

Mr. Williams: I am now narrowing it down to the particular subject before us.

Chairman Bond: The best way is to get down to the Cement field, if you bring it back to the field, the Commission will sustain you on it.

Mr. Adams: Note our exceptions.

Mr. Williams (E. W. reads question to witness): I would like to have the Reporter read the question to the witness.

A. I do.

Mr. Williams continues with the witness:

[fol. 1048] Q. Will you briefly outline, Mr. Witness, your opinion in that regard, the conclusion that you have reached.

Mr. Adams: We renew our objections, if the Commission please, for an expression of such an opinion on the present record, it isn't proper, if it is the prerogative of the Commission, it's felt an expression and conclusion and he is not qualified.

Chairman Bond: Overruled. Exceptions allowed. The Commission will permit you to give your opinion on this subject and you are not giving the opinion of the Commission.

Reford Bond, Jr.: The same objections, if the court please, and for the further reason that it is not within the issues of this case insomuch as it invades the province of the Commission.

Chairman Bond: Objections overruled. With this understanding that counsel bring it to the pool before the witness leaves the stand.

A. (Witness.) May I ask a question, I would like to reply to the question asked me in terms of general principles, is that the right thing to do?

Chairman Bond: You may ask your counsel if that is the thing to do.

[fol. 1049] Mr. Williams: I think that is right. I know that this Commission has to come to a decision. It is for the Commission, an expression for an opinion, but I am sure that the Commission in arriving at its decision, would like to have the opinion of men who are qualified in the field and that fields with principle.

Chairman Bond: That is the theory that we are admitting the testimony under and the Commission makes its decisions in weighing the testimony of the witness and the law and the credibility and weight of the witnesses.

Mr. Adams: I don't want to keep making objections.

Chairman Bond: That is your duty, to represent your client.

Mr. Adams: The law itself says that we may have unitization in Oklahoma under certain circumstances and it's not up to the witness as to whether it is a fine thing. If the circumstances are deduced here and equities are distributed properly, it doesn't make any difference whether this witness thinks that it is right or not.

Chairman Bond: The Commission is bound by the constitution and the statutory laws of the State of Oklahoma, and we admit that we don't have power and jurisdiction [fol. 1050] that the court has and when the Legislature speaks, we are bound by it. That is one of our limitations, whether we are bound by jurisdiction in the unitization in the terms of recovery of oil.

Mr. Adams: We renew our objections.

Chairman Bond: Sustained. And he may speak about the Cement field, he might have some knowledge of the plans that counsel desires to have given on the Cement field.

Mr. Williams: Is it the desire of the Commission that we continue?

Reford Bond, Jr.: Note our exceptions.

Mr. Adams: Note our exceptions.

Chairman Bond: The legislative acts are not clear and what we want. We want to know and hear from the best experts in the United States. We are doing all we can, and although we can't do what we want, if your clients are not satisfied, they have the Supreme Court to appeal to.

Mr. Williams: Continuing with the witness:

Q. In other words, Mr. Witness, in terms of general principles, what is the connection with the Medrano pool?

A. (Witness) What do I do now?

[fol. 1051] Q. I think that you can continue now and answer the question.

A. Do I answer now? The first step in the repressuring problem involved is the return of gas to the reservoir from which the gas was produced or the accumulation of gas from some other source, which is then injected into the reservoir, and three things can happen. As a result of that injection in the first place, the pressure decline may be retarded in the same place. It is possible if sufficient gas is introduced in that manner to maintain the pressure at a constant level or if ever a larger quantity of gas is injected in the reservoir, it is possible to increase the pressure above that to prevail at the time the field was discovered, which every one of these three things, results will depend on the quantity of gas injected in the reservoir and the quantity of gas which may be withdrawn, and at approximately the same time. The greater the need, the amount of gas introduced, the higher the pressure, which may be maintained. The sand point in connection is as a result, is the pressure increased, maintained or proportionately restored at a high pressure, as created within the gas area as compared with the pressure in the oil area, so that when the *gn*eineers designated it as a pressure differential, as exists between the gas area and oil area, as a result of that oil moves as it always does, of pressures of high quantity to pressures to areas where the pressure is lower that tends to prolong the flowing life of the oil wells. [fol. 1052] The third point, such pressure tends to keep the gas in solution in the oil and as a result, the viscosity of the gas is kept lower, which means fluidity of the oil is lower and it changes in formation much like in an automobile engine when the engine is hot or cold, when it is hot the fluidity decreases or increases, that is the same thing that happens with the gas that is kept in solution in oil. On the — hand, if the pressure is not maintained within the reservoir by the gas injection, then the oil loses its high fluidity and becomes more viscus and it requires a greater distance in pressure to deliver it to the well cores. Another thing which results from the return of the gas to the reservoir is the curtailment of the gas waste and the elimination of blowing gas into the air, as a result of these things, the increase recovery that is maintained under these conditions may range from as low of thirty per cent increase to as

much as one hundred per cent increase, so it is possible under sound engineering practices to more than double a total ultimate recovery from the reservoir and it is particularly true shown in the reservoir, where the propelling engine has gas dissolved in the oil or present in the gas cap; another thing then, there is more or less correllary is to prevent the decline, a monthly decline, or yearly output of the well, the rate can be maintained high with porosity in decline of the output of individual wells and can be done by maintaining from the same time a very low gas-oil [fol. 1053] ratio. It is also possible, under a repressuring unitization program that I have outlined, to operate the wells to collectively produce from these wells, that can be produced with the least possible amount and consistent volume energy, the wells that reach a high gas-oil ratio represents a long time, that represents the life of the field. Wells that reach that state have high gas-oil ratio, can be shut in and used as gas injection wells or shut in entirely or oil taken from other selected wells. The drilling of new wells in such a project can be controlled entirely on the basis of the best engineering evidence available and that applies also to the geological information available under such conditions in the gas that goes back to the reservoir is not lost, that can be later sold too regardless, pipelines or other channels when the oil is obtained from the field or when the gas ratio is so high that economically construction cannot be operated. In other words, the reservoir becomes a storage reservoir, or gas from the oil or gas in that field that can be put back in the reservoir where it cannot only serve to include a reservoir of oil, but is a storage tank itself. The net result is such an increase in the total amount of oil that can be recovered under the circumstances, that will practically amount to the discovery of an entirely new pool. It will range from twenty million barrels to fifty million barrels or more, so it practically [fol. 1054] becomes a new field or a discovery of considerable magnifude.

Mr. Adams: We would like to make a motion to strike the witness's answer.

Chairman Bond: Overruled for the present and exceptions allowed.

Mr. Williams continues with the witness:

Q. Let's go on to the Cement field and not worry counsel and the Commission.

Chairman Bond: You may proceed.

Mr. Williams continues with the witness:

Q. You have stated certain principles in respect to certain repressuring and unitization, have you made a study of the West Cement pool that is here under consideration?

A. I have.

Q. What information have you had available to you with respect to that pool and from which you have made your study.

A. I have had available the production data, both gas and oil, from the West Cement field. I have seen the geological maps show such thickness and general structure of the area and have studied them.

Q. When you refer to geological maps, do you refer to Exhibits 54 and 57?

A. I don't know, I will have to examine them. (The witness examines Exhibits 54 and 57.)

[fol. 1055] I am familiar with exhibit 54. Exhibit 54 is a structure map based on the top of the Medrano sand, and 55 is a map based on the bottom of the Medrano sand.

Q. I hand you an exhibit, Exhibit 56, and ask you if that is the map you had available to you and which you considered.

A. Yes, sir.

Q. And also Exhibit 57?

A. Yes, sir. Exhibit 56 is what we call the thickness or Isopac map which shows thickness of the gas sand, and number 57 is a similar map that shows the thickness of the oil sand in the Medrano field.

Q. And these are the geological maps to which you made reference?

A. Yes, sir.

Q. Now, continue doctor, to relate further information that you had available to you and used in your studies.

A. I also had what we designated as reservoir study of the pool, the Medrano pool, marked Exhibit 71. I am also

familiar with that and that was given to me when I first began the study of the field last fall.

Q. Have you had before you the plan of unitization here proposed?

A. Yes, sir, I have. It is marked Exhibit No. 1.

[fol. 1056] Q. Is there any other information that you have available to you, that you have taken into account?

A. I have heard most of the hearings and have had a fairly liberal education at the hearings. I think that I understand the testimony that has been given, does that answer the question?

Q. Now, in your judgment, doctor, have you had available to you sufficient information upon which to base a sound opinion with respect to reservoir conditions in the West Cement Medrano pool and the possibilities in that pool with respect to unitization and their repressuring operations?

Mr. Adams: We object to the form of the question.

Chairman Bond: Sustained. The Commission will pass on the soundness of the matter.

Mr. Williams: I think that he being an expert, that this information is sufficient for him to form a conclusion.

Chairman Bond: You added sound opinion, the Commission will decide that.

Mr. Williams continues with the witness:

Q. I will change the form of the question, that you may answer it. Have you formed an opinion as to the reservoir conditions, and the extended possibility of it and ask you from the information that you had, was that sufficient for you to form an opinion as to reservoir conditions and the possibility with respect to repressuring, as a means of increased recovery of oil?

[fol. 1057] A. I don't believe that is the same question. Please read it to me.

Reporter's Note: Reporter reads question to witness.

A. I think so. I am used to looking over engineering reports.

Q. As a result of your study of the engineering reports to which you made reference and the other information that you had available to you, have you an opinion with

respect to the benefits to be gained in terms of a greater ultimate recovery of oil, from the unitization of the West Cement Medrano pool and pressure maintenance operations.

A. I have.

Q. Now, in your testimony, doctor, you have made reference to an increase in the recovery of oil as the result of unitization and maintenance operations, I will ask you if, from an engineering standpoint, if it's possible to calculate with reasonable accuracy the amount of oil that is in the reservoir, the amount recoverable by what is known as primary competitive methods of operation and to estimate the additional amount recoverable through unitization and pressure maintenance operations as applied to the Medrano pool.

A. The questions are quite long. Will you please read part of it to me?

(Reporter's Note: Reporter reads question to witness.)

[fol. 1058] A. It is possible to do so, with a reasonable degree of accuracy.

Q. What do you mean by "reasonable degree of accuracy"?

A. Well, in engineering practice there are certain limits within which we have what is called the safety factor or tolerance factor, and within limits we use that and in matters of oil and gas percentages of reservoirs,—we have the information and we try to be accurate, but if the information is not satisfactory it gives a wider range, a wider permissible range as to the degree,—does that answer your question?

Q. Is the information available with respect to the Cement pool sufficient to provide or permit a reasonable degree of accuracy?

A. Yes.

Q. Will you outline briefly for the Commission some of the methods used to estimate the amount of oil in the reservoir?

A. There are three methods but the one most commonly used and the oldest is the volumetric method,—that is the method which Mr. Kaveler explained quite clearly.

Mr. Adams: We ask to strike that part of the answer [fol. 1059] about "quite clearly".

(No Ruling)

Q. The volumetric method takes into consideration the areal extent of the oil stand and the average porosity, the average saturation with respect to the oil and water together with the volume of the oil in the reservoir as based on the amount of oil reduced to stock tank oil,—another method is to use the various types of decline curves in which the curve is used as one factor and by which the recovery, total recovery from the pool may be estimated and by this method it is possible to forecast with a rather high degree of accuracy the total production to be derived from the reservoir. Another method commonly used is what is called the material balance method and based on the sum of the hydro carbons present in the reservoir plus the hydro carbons removed from the reservoir, however the mathematical calculation is an extremely complicated equation. As Engineers, Engineers can if they have had sufficient experience take the three methods which will give sufficient information as to the total oil in the reservoir and the amount of oil which may be recoverable from the reservoir. We can determine with a reasonable degree of accuracy the amount of oil recoverable under varying conditions.

Q. Have you thus made an estimate of the original oil in place in the West Cement Medrano field?

A. I have.

[fol. 1060] Q. Did you use one or more of the methods you have described?

A. I used the volumetric method in this case.

Q. And by that method you arrived at your conclusion as to the amount of oil in place in the West Cement Medrano field?

A. I have.

Q. What was the result of your investigation or calculation?

Mr. Adams: Objected to as incompetent, irrelevant and immaterial. We are not interested in the amount of oil

that may have been in place in the Medrano field in this area.

Mr. Williams: The Commission is entitled to know what the original volume was, in order to determine what may be saved of the original volume.

Chairman Bond: The objections overruled.

Mr. Adams: Exception.

A: My calculations are not,—I think I misunderstood your question as to the amount of oil originally in the reservoir,—I computed the amount of oil present when oil was first discovered. I have 98 and a half million barrels of oil present.

Q. As of the date of the original oil discovery?

A. Yes.

Q. Which was sometime in 1943?

A. Yes,—now, that could be qualified by saying it is within three or four percent.

Q. In your experience have you had opportunity to com- [fol. 1061] pare the results of the,—obtained by these different methods of calculation as to the same pool?

A. Yes, I have had an opportunity to compare the results of the different methods, quite a number of times in quite a number of cases.

Q. What do you find in that regard, as to the comparison of the result?

Mr. Adams: We object to that as immaterial.

Chairman Bond: Overruled.

Mr. Adams: Exception.

Chairman Bond: You are not going to have him testify as to the volumetric figure, the pressure figure and the material balance factor and compare them, are you?

Mr. Williams: I want him to state what has been his experience in the use of the different methods in different fields.

Chairman Bond: If he only used one of them, what is the difference,—you might use that testimony to show——

Mr. Williams: Well, someone may ask him why didn't you use one of the other methods and I think this testimony should be allowed to show that the results are comparable,—I'll ask that question.

Q. Why did you, in this instance, use the particular method that you did use to the exclusion of the other two methods?

A. I used the volumetric method in this instance prin-
[fol. 1062] cipally because it is a much shorter method and I wanted to complete the work, this method being equally accurate and used by a number of Engineers. I got 98,000,000 barrels and other Engineers got 97,000,000.

Chairman Bond: In accuracy do you believe it is comparable with the other two methods?

A. Yes.

Q. Is it possible from an Engineering standpoint to make a statement of the amount of oil that is reasonably recoverable by primary competitive methods and operation?

A. Provided you have sufficient information available on that particular pool, yes.

Q. In your opinion did you have such sufficient engineering data available to you to make such an estimate with reference to the West Cement Medrano pool?

A. Will you repeat the question?

Q. In your opinion, did you have before you sufficient engineering data, before you or available to you, from which to make such an estimate with reference to the West Cement Medrano pool?

A. Well, I am still,—I don't understand.

Q. To simplify it, have you made an estimate of the primary recovery?

A. Yes.

Q. Is it possible to make such a calculation?

A. Well, I don't think I would not have done so if it was
[fol. 1063] an impossibility,—I couldn't do that.

Q. What method did you use in making such an estimate?

A. I estimated the recoverable oil on the basis of the percentage,—on a percentage basis, and that runs twenty five percent of oil in place, stock tank oil, approximately twenty five percent can be recovered by primary competitive methods,—actually, I found it to be 24.3 percent.

Q. You mean the operators will be able to recover 24.3 percent of the original oil which you estimate to have been in the reservoir, as of the date the first oil was discovered?

A. Yes, expressed in terms of stock tank barrels.

Q. Approximately, that is, 25 percent of 98,000,000 barrels?

A. Yes, I used 97,000,000, but that makes no difference.

Q. Have you made a study or estimate of amount of oil recoverable from the West Cement Medrano pool by means of Unitization and pressure maintenance?

A. Yes, I have.

Q. Can you state that amount, with a fair degree of accuracy?

A. I wouldn't have made it if I couldn't have made it with a fair degree of accuracy.

Q. Well, what is that estimate and state what method you used to arrive at it?

A. I based my estimate on comparative experience with other fields and primarily in the Schuler field in Arkansas, approximately 44 percent of the present amount in the [fol. 1064] reservoir can be recovered. They will probably get more but that will certainly be,—they will certainly get 44 and probably will get more.

Q. In other words by pressure maintenance of the amount of oil in place, 44 percent would be recovered, as against 25 percent under competitive methods?

A. That's right.

Q. Will you figure, have you figured, in barrels, the amount of increase by pressure maintenance operation and the amount under the present methods of operations?

A. Expressed in barrels, I have. Expressed in barrels I have 19,160,000 barrels to be recovered from the West Cement Medrano field over and above what may be produced by primary competitive methods, an estimated 24 million barrels by primary competitive methods and a total estimated ultimate recovery of 42,800,000 barrels by pressure unitization.

Q. Doctor, from your experience can you point to any example, any pool that is comparable to the West Cement Medrano pool where such results have been obtained?

A. I can.

Q. Is the pool to which you refer, in your judgment, comparable to the West Cement Medrano pool?

A. It is.

Q. What is that pool?

A. The Schuler-Jones sand pool of Arkansas. I have been intimately associated with the operators of that pool and with the information from the pool itself, since 1939 [fol. 1065] and receive reports to this day.

Q. Where is this pool to which you make reference?

A. In Southern Arkansas.

Q. Will you detail the points of comparison between the Schuler pool and the West Cement Medrano pool?

A. Well, may I used the board.

[fol. 1066] And now at the hour of 1:30 p.m. all parties being present the commission being present, the hearing of said cause is resumed and the following proceedings are had:

Dr. Stephenson resumes the witness stand.

By Chairman Bond: Gentlemen, you may proceed.

By Mr. Williams:

Q. Dr. Stephenson, you said you would during the noon hour list on the blackboard the points of comparison as between the Schuler Field and the West Cement Field, have you done that, sir?

A. I have endeavored to do so, yes, sir.

Q. Will you step to the blackboard, sir, and explain to the Commission the information you there have shown?

A. The table on the board shows various essential features of the two pools and particularly those which are important from the standpoint of oil in the reservoirs. Schuler had a total number of acre feet 152,000; West Cement 123,000. The average porosity in the Schuler field, the Jones sand was 16.3 per cent and West Cement 16.5 per cent. The average permiability in Schuler 400 millidarcies, West Cement 300 millidarcies. The amount of connate water in Schuler averaged 15 per cent while at West Cement it averaged 20 per cent. Now those are the most important feaures. Initial bottom hole pressures were somewhat different—Schuler 3520 pounds at the bottom of the hole and West Cement 2130 pounds. Reservoir tem- [fol. 1067] perature were quite different, Schuler 198 deg. Fahrenheit, West Cement 116 deg. Fahrenheit. Formation volume factors Schuler 145, West Cement 114—that means at Schuler it takes 145 barrels of reservoir oil to make one

hundred barrels of the stock tank oil, and as of date of discovery West Cement oil took 114 barrels of reservoir to make 100 barrels of the stock tank oil. The average pressure for approximately the middle of the year 1946 were 1468 at the bottom of the hole at Schuler and 1448 at West Cement. I neglected one thing, the average sand thickness at Schuler 80 feet, West Cement, 95 feet—the gravity of the oil identical, 37 deg. and 37 deg. both reduced to standard conditions 60 deg. Fahrenheit. The amount of remaining gas in solution at the time these average pressures were taken, 303 cubic feet per barrel at Schuler and 291 cubic feet per barrel at West Cement.

Q. What is the energy factor in the Schuler field, is it a gas drive field, a gas-cap drive, a solution drive or water drive?

A. The Schuler pool is a solution gas drive field, with a very small gas-cap. West Cement is a combination solution gas drive with a larger gas-cap in the field.

Q. I believe you testified originally that the Schuler pool in your opinion is one that can be used or pointed to as an example to determine what can be done in West Edmond?

A. I think so, yes.

Q. Are these points of comparison such that would sup-
[fol. 1068] port that conclusion?

A. I think so.

Q. Is the Schuler pool in Arkansas unitized?

A. Yes, sir, it is unitized, it was unitized on February 15, 1941.

Q. Were you acquainted with that pool prior to its unitization?

A. Yes, sir.

Q. At the time that pool was unitized, did you make any estimates as to the original oil in place and did you as to recovery under different methods of operation?

A. I made an estimate as to the recoverable oil. I made first, I made an estimate first of the amount of oil in place in the reservoir expressed as stock tank barrels and also of the amount of oil which could be recovered under competitive conditions, then prevailing as well as the amount which could be assured by recovery under unitization and repressuring.

Q. That estimate was made prior to unitization?

A. That was.

Q. Will you give to the commission the estimates which were made by you, first with respect to recoverable oil, second with respect to recoverable oil by the then competitive methods of operations, and third the amount which in your opinion was recoverable through unitization and pressure maintenance.

By Mr. Adams: Just a minute, we object as immaterial. [fol. 1069] By Chairman Bond: Overruled. If his judgment proved fairly correct in one field the Commission might consider as to whether or not it will be fairly correct in another one.

By Mr. Adams: Might I ask the witness a qualifying question—where did you get the figures you placed on that blackboard with respect to the West Cement pool?

A. I have taken them from the Engineering report which is *is* Exhibit 71.

Q. You haven't attempted yourself to make a study and the computations with which to determine whether or not every one of those figures is accurate.

A. I have not.

Q. We make the further objection that the witness is attempting to express an opinion based upon an opinion which has been expressed here by others, and therefore his testimony is not competent.

By Mr. Williams: This information is all information that is here in evidence.

By Chairman Bond: If it is information here in evidence, but he will have to base his opinion upon the testimony of other facts in evidence here and not upon his own as to West Cement field.

By Mr. Williams: If it is true as to basic information, it [fol. 1070] is in evidence and he is basing it on this information. If the Commission ultimately disbelieves his evidence, then of course his conclusions would fail.

By Chairman Bond: The Commission will receive his opinions with that understanding that it is based on testimony offered in evidence and not upon his own investigation.

By Mr. Williams: That is correct.

A. I did not measure the thickness of the sand. I did not measure the areas involved. I did not measure the porosity. I took those figures with the engineering data which I was provided.

By Mr. Adams: Perhaps I didn't make my objections clear to the Commission. It is our position it is not proper for any witness to express an opinion based upon in whole or in part an opinion expressed by some other witness.

By Chairman Bond: He cannot base his opinion upon an opinion of some other expert witness, but he can base his opinion upon figures on condition that those figures are correct. Of course, reasoning by analagy you might say you give the same set of figures to two experts, their opinions will probably be comparable, but these figures are in testimony and the Commission has got either to accept them or reject them in their final analysis. We permit him to [fol. 1071] express his opinion based upon figures that have been offered in testimony. If you gentlemen contradict these figures his opinion might not weight very much—if you do not contradict, they might give more credibility to his opinion.

By Mr. Adams: Exception.

By Chairman Bond: Exception allowed.

And at this time the question is read by the reporter.

A. I have prepared an exhibit which perhaps may help on that question. I estimated the amount of oil originally present in the reservoir at Schuler as of date of discovery as 117 billion barrels as stock tank oil. Then I made an estimate of the amount of that oil that would be recovered under normal competitive practices as then prevailed, that estimate is shown by line A-B of this chart. It is under number 80, Exhibit 80 and the original of this was prepared in January 1941 by——

By Mr. Williams: By whom?

A. By me, and this is an enlargement of the original. I estimated that the pressure declined as shown on this chart, which was at that time taken from the State of Arkansas monthly report, the pressure had declined to 2000 pounds and during that decline, it had produced a little over 16

million barrels of oil and so I have copied by the little points shown in black, a long line A-B, I have copies the relation between the amount of the total production or gross production which we sometimes call cumulative production against declining pressure so each point represents two [fol. 1072] things, it represents the amount of pressure decline 700 pounds and the amount of production as of the time that pressure was measured, was a little over 5 million barrels. Well it is well understood among petroleum engigineers a line of that sort, which is a straight line, can be used to forecast future production and by the time the pressure had declined to 2000 pounds or about 1500 pounds pressure the field has produced a little over 16 million barrels of oil and hence it is a very simple matter to project a line into the future by extending it as a straight line which is done in the extension from B to C shown as a dotted line, that shows the amount of oil which would be recovered if the pressure were allowed to drop down to a limiting point—I stopped with an abandonment pressure of 200 pounds at the reservoir or a total decline of 320 pounds, at which time the reservoir would have produced 30 million barrels of oil. So deducting the 16 fraction million from 30 million barrels means that the initial recovery as of that date is slightly over 13 million barrels of oil under competitive methods of operation such as then prevailed. Since it was planned to unitize the field in February 1941, I also made an estimate as to how much oil would be recovered if pressure maintenance were started, put into effect, and unitization started at the same time, and that the line shown as B-D under which circumstances I estimated that the total amount of oil to point line D-E would be approximately 50 million barrels or 35 million barrels more, that is approxi- [fol. 1073] mately 35, it comes out 51 million barrels and a fraction, by the time point E had been reached, which represents a slight decline in the pressure in spite of pressure maintenance. Actually that field had produced as of January 1, 1945 a little over 40 million barrels and of the expected future recovery 35 million barrels it actually has produced as of that date almost 22 million barrels of oil, amount still to be recovered in order to reach my estimate of 51 million barrels is 12 million barrels more

and the field is now producing at the rate of 8,000 barrels per day. It is going to produce more oil than I anticipated in this graph—so my figures are conservative.

Q. Now with respect to your estimate at West Cement, are those estimates conservative or can you reasonably expect a repetition of what you have found to exist at Schuler?

By Mr. Adams: We object, it is testimony of the witness to pay himself on the back.

By Chairman Bond: The witness can give his opinion.

A. An opinion of what?

By Chairman Bond: You are to give your opinion to Counsel's question, your opinion based on the figures furnished you at Cement, and not upon figures made by yourself.

By Mr. Williams:

Q. My question is based on the figures that have been furnished.

A. The estimate of 51 million barrels for the Schuler pool [fol. 1074] represents approximately 54 per cent of the total oil originally present in the reservoir for present as of the date of discovery of oil and hence I have taken the position that if the West Cement pool is pressured at the present time it will too recover 44 per cent or 44.2 per cent of all oil in the reservoir, which is 97 million barrels and that 44 per cent of 97 million barrels or 42.8 million barrels as the expected recovery from West Cement pool under repressure and unitization. Without unitization and repressuring I believe the pool will only produce in the future 16,400 odd thousand barrels and it had already produced as of about March 1st 7,761,000 but it will produce with normal operation in the West Cement pool and no unitization at all approximately 16 and one-half million barrels, but if repressureing is instituted and unitization that field can produce at least 35 million six hundred some thousand barrels in the future.

Q. I will ask you if you made another exhibit that showed a comparison of your estimate in Schuler and the West Cement?

A. Unless it is this table I was using this morning, this is the exhibit, yes, sir. I have made this a photostatic enlargement of my own exhibit.

Q. That is an exhibit that has been marked Exhibit 87?

A. Yes, sir.

Q. Explain to the Commission what that exhibit purports to show?

A. Exhibit 87 purports to portray graphically by means [fol. 1075] of block diagrams past history of the pool together with the expected history of the pool, the left hand side of the Schuler diagram shown that the field had produced 16 million and some odd thousand barrels as of February 15, 1941 and of which the royalty owners received. [fol. 1076] A. Two million, nine hundred and twenty thousand barrels under the competitive methods of operation. It could be expected, two million, one hundred thirty thousand, and royalty owners will receive an additional one million, six hundred and fifty-eight thousand barrels, however under unitization and repressuring, the unit will produce thirty-five millions more barrels and royalty owners, instead of one million, six hundred and fifty-eight thousand, will receive four million, three hundred and seventy-five thousand barrels, and to date the royalty owners have received two million barrels under repressuring operations of which they have received two million, two hundred and sixty-eight thousand, or one million more than they would have received without unitization and repressuring. Applying the same reasoning and engineering principles with Cement field, the estimated future recovery as of January 1st this year, is sixteen and one-half million barrels without unitization or repressuring, and the royalty owners have received eight hundred and ninety-five thousand barrels and in the future two million, fifty-nine thousand under repressuring and unitization. The future will give at least thirty-five million six hundred thousand some odd barrels and royalty owners instead would receive four million, four hundred and fifty-three thousand, five hundred and fifty-three barrels which represents an increase over that which they would receive without repressuring of two million, [fol. 1077] three hundred and ninety-five thousand barrels,

and that two million, three hundred and ninety-five thousand barrels is net royalty owners, will not have received without unitization and repressuring. The Exhibit that I was referring to was Exhibit 87.

Q. Is Exhibit 87 the one that you yourself prepared?

A. I did.

Q. We would like at this time to offer Exhibits 86 and 87.

Chairman Bond: Received.

Mr. Adams: We want to object to that because of it not being binding on the protestants.

Chairman Bond: Overruled. Exceptions allowed.

Mr. Williams continues with the witness:

Q. Do you have a tabulation form that can be introduced into the record about this same information that you testified to and that you put on the blackboard.

A. I have prepared a sheet that shows a comparison of the Schuler-Jones field and West Cement, the barrels of tank oil.

Q. I hand to you an exhibit, the reporter has marked Exhibit 88 and ask you if that is the exhibit to which you refer.

A. It is the original which I made myself.

Q. We would like to offer Exhibit 88 in evidence.

Mr. Adams: It's objected to, if the Commission please, on [fol. 1078] the grounds that it is mere repetition and an accumulation of testimony.

Reford Bond, Jr.: It is a recapulation and repetition.

Mr. Williams: It is a repetition, but a mere concrete record.

Reford Bond, Jr.: And we also object for the same reasons that it congests the record.

Chairman Bond: Received in the record.

Mr. Williams continues with the witness:

Q. Doctor, in your study that you have made of the West Cement field, have you had occasion to study the procedure followed by the engineering committee in arriving at the division of equity as here testified in the record?

A. Yes, sir.

Q. I will ask you if the procedures thus followed are in accordance with good and accepted principles and practices, in your opinion.

Mr. Adams: That is objected to as inviting the province of the Commission.

Reford Bond, Jr.: Same objection and for the further reason that property cannot be taken by opinion evidence, but evidence as to value.

Chairman Bond: Overruled.

Mr. Adams: Note our exceptions.

[fol. 1079] A. I don't think that I can answer the question because it doesn't give me any time at procedures to which I can refer.

Mr. Williams continues with the witness:

Q. The procedures, as adopted by the engineering report and as reflected by the testimony as introduced in this record, which I understand that you heard.

Mr. Adams: We renew our objections.

Reford Bond, Jr.: Same objections.

Chairman Bond: You can't testify unless you know the procedure followed and then you can testify as to procedure followed and the practices.

A. (Witness) I would like to have the question clarified as to particular procedures, I would have to have that before I can give an answer as to the sound procedure in the inquiry.

Mr. Williams continues with the witness:

Q. Doctor Stephenson, did you hear Mr. Kaveler's testimony with respect to the factors taken into consideration in arriving at the equity distribution?

A. I did.

Q. I will ask you if the factors testified to by Mr. Kaveler were considered in arriving at the equity distribution or factors which are in accordance with good and accepted engineering practices?

[fol. 1080] Mr. Adams: We make the same objections.

Chairman Bond: Objections overruled. Exceptions allowed. These are standard procedures.

Mr. Williams: That is all.

Chairman Bond: You may cross-examine.

Mr. Adams cross-examines the witness:

Q. Doctor Stephenson, by whom are you employed to come here and testify as an expert witness.

A. I really don't know, Mr. Adams. Mr. Kaveler called me on the telephone sometime last October and asked me if I would help on the unitization program on the West Cement, nothing was said who was my employer or anything else.

Q. You are employed, aren't you?

A. I think so.

Q. Do you know who Mr. Kaveler is?

A. Oh, yes, I do.

Q. You know he works with Phillips Petroleum Company?

A. Oh, yes.

Q. Do you expect to be paid for your services?

A. I do, oh, yes.

Q. Do you expect to be paid?

A. Oh, yes.

Q. If no one else pays you, you expect Phillips Petroleum Co. to pay you?

[fol. 1081] A. Yes, sir.

Q. Mr. Kaveler told you that Phillips Petroleum Company was interested in trying to unitize and that the company become the operator of the property, in what is known as the West Cement Medrano area.

A. No, sir, that is not correct.

Q. You don't know that Phillips Petroleum Company is to take over the operation of this unit area, if the plan is approved?

A. I do not.

Q. Did you testify that you studied and read the plan?

A. Oh, yes.

Q. You don't recall that?

A. I do recall the plan, I had no idea who was to operate

until I received these two documents, marked Exhibit 71 and 1 in this case.

Q. How much of your time do you devote to teaching at Kansas University?

A. All that the University requires of me. That is difficult to say, my arrangement at Kansas University is, as the Head of the Department and engage in said practice as I deem wise.

Q. You don't turn down any consulting work.

A. Yes, I certainly do. I turn down more than I accept.

Q. Can you state approximately how much of your time, percentagewise, that you devote in your teaching or super-
[fol. 1082] vision and the department of the Kansas University, which Kansas University pays you.

A. I don't think that I can break that down.

Q. You don't have any idea?

A. It varies from year to year. I have not tried to express it on a percentage function.

Q. You say, fifty per cent of your time?

A. Oh, no, that is absurd.

Q. Twenty-five percent?

A. No, sir.

Q. Ten per cent of your time?

A. It is possible, but that varies from year to year.

Q. You haven't had any practical experience as a practical petroleum engineer, if I recall since 1930.

A. I have worked many summers in practice for union producing companies since 1930 to 1937.

Q. Since 1937, have you had any practical experience as a petroleum engineer?

A. Oh, yes.

Q. For whom?

A. Myself and the University of Kansas and we undertake the solution of many engineering problems which took me into the field and required me to indulge in petroleum engineering.

[fol. 1083] Q. Weren't all of those practices indulging in theories and not economics?

A. No, sir, that is not a fair statement of the facts.

Q. Well, you know what I mean when I say practical experience, that means either working in your own behalf

or for someone else where you are going to be charged with the results if they are unfavorable.

A. And credited if they are favorable.

Q. And credited if they are favorable.

A. All right, I think that I can excel your definition temporarily, anyway, as to what you mean by practical experience and say that I have had much practical experience in the past ten years and——

Q. And for what company and where and when?

A. In the first place, I am going to appeal to the Commission, much of this work has been done confidentially for many oil companies and I don't think that I should reveal this confidential information, and it doesn't pertain to this particular case. If the Commission overrules me, I will do so.

Chairman Bond: The Commission does not want to cause you to reveal any confidential matter and will so hold.

A. Thank you, I will decline to answer your question.

[fol. 1084] Q. You are granted the privilege.

A. I don't know what you call it.

Mr. Adams: Note our exceptions.

Chairman Bond: Exceptions allowed.

Mr. Adams continues with the witness:

Q. Now, you named a great many fields, I don't know whether they are oil and gas fields or oil and gas fields where you have made some study of oil and gas producing states in the union. Do the studies have any relation to the Medrano, the West Cement Medrano area?

A. I find it difficult to answer the question. I think that the extent to which I refer has given me an opportunity to become familiar with and have found sound engineering judgment in other fields because after the judgment is made it is an accumulative experience.

Q. Don't you agree, doctor, that a man's experience with his own money is apt to give him a little better judgment than experience gained at someone else's expense and with their money.

A. I have also had that experience with my own money.

Q. How long ago was that, doctor?

A. I refuse to answer that and that goes into my personal prerogative and I don't want to answer that.

Q. I think that it makes a good deal of difference as to whether a man is a practical man or theorist.

[fol. 1085] Chairman Bond: If your judgment is bad in one case, then it might be bad in another and you can show it. The Commission has protected you, doctor, in your confidential and professional work, because it had nothing to do with the Cement field. If you had any confidential or professional work in connection with this field whatever, or in other fields that compares to this field, if you have been a failure or success in other fields, counsel can show these facts. You have been practical or theoretical or a success or a failure.

Mr. Williams: I don't believe that is counsel's question.

Mr. Adams: I was endeavoring to show, I assume that the doctor is human and to be human is to err. He has said and pointed to what he deems a fine prognostication on the Schuler field, and I feel that if he would permit us to search his experience, we will find out if he has made a bad guess.

Chairman Bond: You can search his experience, but you can't find out if he lost money in a field. You can ask him about the field, but you can't ask a man if he lost money in a financial adventure. He might have lost on someone else's [fol. 1086] judgment or for other reasons, there is a difference in testifying on that.

Mr. Adams continues with the witness:

Q. Doctor, you mentioned awhile ago two articles that you have published, I wonder if you would present to us copies of these articles that you have stated you published, so the Commission can determine whether it has any relevance as to petroleum or mining engineering in respect to this matter.

A. I do not have them and the janitors threw them out of a box when we moved from another building at Kansas University.

Q. Can you make copies?

A. I have given suitable references to the various journals

and publications in which they can be found. That is the best I can do. I can give you the page number of most of those.

Q. Would it inconvenience you if you gave me the little black book and let me cross-examine you from it?

A. Yes, here it is. (Hands black book to Mr. Adams.)

Q. Going down this list of articles that you say you have written and which you say were published, I believe this first article here is "Decline and Production of the Ranger Field," what did that article apply to, doctor, what is the substance of that article.

A. "Decline and Ultimate Production of the Ranger Field"—just what the title says.

[fol. 1087] Q. Is that field unitized?

A. No, sir.

Q. That was written in 1920, I believe?

A. Yes, sir.

Q. Was that a resume of what happened in that field?

A. A discussion of various and practical operations in the Ranger field, there were twenty of them and the history and future production of the wells and tracts.

Q. Was there anything more than an outline of the engineers report.

A. I don't feel that I can pass judgment on my own publication, of that sort. As you suggested, Mr. Adams, it was commented on by the editor of the Engineering and Mining Journal in the May issue, 1920, and received a special editorial comment.

Q. But you don't have the magazine here, do you, doctor?

A. No, sir, I do not.

Q. Do you think that it has anything to do with this proceeding?

A. I think that it has a lot to do with the development and background of my own experience.

Q. The next article says, "Proration and Base of Gas Energy," 1931, does that have something to do with maintenance, with gas reservoir pressure?

A. I don't think, with maintenance and pressures, no, it is [fol. 1088] an attempt to discuss the whereas of the gas pressures and the amount of gas energy available as to proration between pools or various tracts.

Q. In other words, you think in 1931, you felt that pressures where there was a wide variance between tracts should be taken in consideration as between proper proration between tracts.

A. I was discussing that. It could be done and it would be very proper and valuable if it was done.

Q. Do you think that there was a proper factor?

A. Not necessarily.

Q. You don't think that, if one tract has a high pressure and the other a low pressure, that that is a factor?

A. I think so, yes, sir.

Q. Assuming all other factors with respect to each tract, what pressures there are substantially different, do you think they might be taken in consideration?

A. I think it might be taken in consideration.

Q. Do you know, have you studied the formula presented here by Mr. Kaveler, do you know whether he took these pressure differentials into consideration in this area?

A. I don't think that the pressures specifically are taken in consideration as pressure numbers but taken in consideration with respect to the saturation and in that respect that [fol. 1089] was taken into consideration in this particular problem.

Q. Explain that. How was it taken into consideration?

[fol. 1090] A. As the pressure has declined in the reservoir some gas has come out of solution and that has changed the saturation of the sand—what was oil saturation has become gas saturation to that extent and to that extent oil pressure has been taken into consideration.

Q. You have studied Exhibit 71, have you?

A. I have.

Q. You notice it is prepared by segments?

A. Yes.

Q. Did you notice the Isobar Map?

A. I did—I did not discuss it, but I believe it is among the Exhibits.

Q. In discussing the repressuring with gas which you talk about, you mentioned the common practice of clearing gas—do you think Oklahoma should permit gas to be cleared in the West Cement Medrano pool?

A. I believe if the wells are to be produced on a certain

gas oil ratio and that the gas is so produced is permitted to go into the air, it is called "flare" gas.

Q. And have you made any estimate of the amount of gas permitted to be flared in the West Cement Medrano pool?

A. I have not.

Q. From the information you have do you have any substantial—do you think any substantial amoung of gas is lost in that manner?

A. The field has produced 50,000 MCF per day——

Mr. Crowe: Let the records show that Mr. Kaveler cor-[fol. 1091] rected the witness.

Q. Doctor Stevenson, when you talk about flaring gas you mean the gas produced with the oil?

A. That's correct.

Q. I don't believe you have been hearing, I don't believe you have been here all during the taking of the testimony, have you?

A. Well, I think I missed one day, Tuesday of this week, —the record will speak for the testimony of that day.

Q. And aside from that you have heard all of the testimony?

A. I think so.

Q. And you have reviewed all of the Exhibits, over here?

A. No, I have not.

Q. What portion did you review, or, if you prefer, how many have you not reviewed?

A. Well, I cannot answer that,—how many have you?

Q. 88.

A. Well, I am familiar with 54, 55 and 1 and 2 and 86 and 87 and No. 71 and——

Q. In saying you are familiar with those Exhibits do you mean you have studied them?

A. I have studied them, yes.

Q. Now, you have, in studying Exhibit 1, I take it, if you have looked at the Exhibit you have become familiar, at least you have looked at the equity and percentages of participation that are there reflected as to each of the [fol. 1092] tracts that are to become a part of the proposed Unit?

A. Yes.

Q. And you testified that you heard Mr. Kaveler in his evaluation of factors and his testimony as to the percentages of equities and as to how they were determined?

A. Yes.

Q. Mr. Witness, as of March 1, 1946, Table 5 of Exhibit 53 shows that from this Medrano area, the Medrano sand area there has been produced, as of that date, 5,640,000 barrels of oil. Now, you estimate that there will be produced by normal operations twenty five percent of 98,000,000 barrels, in round figures, 24,000,000 barrels, which gives 23,640,000 barrels without Unitization or repressuring. Now, if you will permit for the purpose of simplification, 24,000,000 barrels——

A. All right, that's good.

Q. So, if you would subtract from the 6,400,000 barrels production as of March 1, 1946 that would leave 18,460,000 barrels of oil which might be reasonably expected to be recovered from the Medrano sand?

A. No, sir, that substraction leaves 18,360,000 barrels.

Q. Now then, assuming the equities were computed on the known information as of March 1, 1946 of the oil which might be expected to be produced subsequently, by normal operations, would be 18,360,000 barrels, is that correct?

A. Yes, sir.

Q. Is that the number of barrels of oil that should be [fol. 1093] used in the production of the various tracts of the proposed Unit.

A. Well, I would say yes if you don't take into consideration any——

Q. Well, you have answered yes, but isn't it a fact that we are dealing with the, or attempting to deal with what we thought we know in determining the contributing factors to the Unit?

A. The answer is yes.

Q. We have to deal with the known facts, as near as we are able, isn't that true?

A. Well, I wouldn't say that you couldn't deal in theory, at all,—I think in cases where the problem is difficult the use of some theory might be necessary.

Q. The method of computation followed by Mr. Kaveler,

was that as you understood it based on facts that we thought we knew, rather than on theory?

A. Well, if you were dealing with facts alone——

Q. Well, do you think we were dealing partly with facts and partly with theory?

A. Well, I think the man was dealing with both under certain geological principles.

Q. Do you remember how it was put on the blackboard, the method followed in determining contributions made by each separate tract to the Unit,—do you recall that?

A. I think I do,—I think he applied to various segments.

Q. You think he was talking about segments?

A. At times, yes.

[fol. 1094] Q. Do you think he was talking about segments and when about something else?

A. I think he was talking about segments when he was talking about segments.

Q. What else was he talking about?

A. A great many different things.

Q. Can you put that equation on the board?

A. Yes, sir, I think I can do that. I think he used 35½ per cent——

Q. Now, Doctor, I don't think you understood the. There was an equation put on the blackboard that showed the method of computation.

A. Oh, I believe that's right,—using the blackboard, 7,758 is the number of barrels per acre foot, that the multiplied by the porosity, and that to be multiplied by the saturation factor which is also expressed in percent and that's to be divided by this figure, it gives the amount of oil in that particular tract per acre foot,—is that what you want?

Q. That's right,—now, with respect to such computations, what one of these elements, if any, is not based on a fact, as you understand it?

A. Well, they are all based on facts.

Q. Well, if we should use that, then 18,360,000 barrels of oil is the amount which would be the total production of the separate tracts going to make up the Unit, is that correct?

[fol. 1095] A. If I understand your question, It is, yes.

[fol. 1096] By Mr. Adams:

Q. Dr. you have testified that you were of the opinion based upon the facts as you have heard them testified here the West Cement Medrano area is very comparable to the Schuler Jones pool in Arkansas, is that right?

A. Yes sir.

Q. Now, all of the factors showing similarity in that respect, and which you previously placed on the blackboard and to which you testified here in our inexistance in all pools are they not, where there is either a gas-cap or gas energy in the oil?

A. I think I understand your question, I think my answer is yes.

Q. So when you say that these two areas have similarity, you mean that all oil fields where there is some gas energy evidence, likewise have similarity, isn't that true?

A. Oh, yes, I think so, all fields have some similarities.

Q. And the degree of similarity depends on the degree with which those various actors as they relate to each separate area relate to each other?

A. Now, I am lost, I cannot answer that one, I am afraid it doesn't mean anything, Mr. Adams, read the question.

(The question is now read by the reporter)

A. I cannot answer the question, it doesn't mean anything to me.

By Mr. Adams:

Q. Well, the reason you say that they are similar is because there is some reasonable relation of the various factors which you enumerate as they existed in two [fol. 1097] areas, isn't that true?

A. I think now I understand your point, they are similar in the sense that the porosity, permiability and the total number of acre feet, the gravity of the oil and the amount of gas in solution at the middle of last year approximately. Now other features, getting back to my question which you didn't think you understood, other fields would likewise be similar depending on the relation of the same factors within the fields, isn't that true?

A. Yes, I think we could find some points of similarity between a great many different fields,—is that the kind of an answer you wanted, all right.

Q. Now are you familiar with the nature of the energy that causes the oil to be produced in the West Cement Medrano area?

A. The nature of the energy?

Q. Yes, that moves the oil into well bore?

A. That isn't a good question from an engineering standpoint. You mean it is the expansion of gas with its primary function moving oil from one place to another in the field,—is that what you mean?

Q. I wonder if that is what you mean when you said a gas-drive?

A. Yes.

Q. So actually if I understand your testimony there are two separate types of energy as you view it that exists in the Medrano area.

[fol. 1098] A. No, I don't think so,

Q. There is not?

A. No.

Q. What is the sole type of energy as you view it?

A. Compressed gas.

Q. When you say that, you mean by that, that existing in the gas-cap as well as that that is in the fluid?

A. Concussion has put the gas in solution, or a portion of it has put the gas in the oil, so it is compressed gas which is the primary source of the energy field.

Q. You use the word primary, what other type of energy do you understand, if any exists in the Medrano area?

A. Well the total height of the oil column reaches from about 400 to 750 feet, hence the possibility of some movement of oil under the existance of pull of gravity, that is one other possible source of energy in the field.

Q. If I understand your testimony correctly the opinions which you have expressed here depends upon the accuracy of the facts testified to by other witnesses as existing in this Medrano area, is that true?

A. In part, yes sir.

Q. Well, how do they not, then depend upon the existance of those facts.

A. Well that is rather hard to delineate, perhaps I cannot do it successfully. But there are certain fundamental principles as regards all oil and gas reservoir and the principal [fol. 1099] one of those is the fact, and this is not theory, but it is connected with theory, that oil moves only in one direction and that is along the line of pressure gradient for it moves from high pressure to low pressure. Now that is not based upon any particular fact in the Medrano sand pool and yet I have used that for reasoning in my efforts to get the total recoverable oil.

Q. I understand but in using the illustration which is now on the blackboard, if any of the factors which have been used in that computation to determine the amount of oil contributed by any tract to the area, if any of those factors are incorrect, then would you say that the computation isn't correct.

A. Well the compatation in itself is a mathematical procedure is not incorrect.

Q. But the results might be incorrect?

A. And the results will be dependent on the accuracy of which the figures are based. Is that clear.

Q. That is right, so if any of those factors are inaccurate, then the results would have to be inaccurate,?

A. That might seem to be a logical conclusion, but not necessarily one, because it might be that the errors might compensate each other and the error in one factor might be compensated by the error in another factor. That is an unusual thing, and I cannot answer your question correctly without giving that statement.

Q. Do you know of any of those factors that are incorrect?

A. I don't know of any factor in there which isn't correct.

[fol. 1100] Q. Assuming only one such factor was incorrect would the result then be incorrect?

A. I don't believe that I am willing to take the assumption that something is wrong and draw conclusions therefrom. I don't believe as a good engineer I am justified in saying this is the wrong way to do it and hence the answer is wrong.

Q. Assuming that this is the correct method from an

engineer's standpoin. to make a computation, you have five or six factors in that computation, if one of those factors wouldn't your result be incorrect?

A. Not necessarily so.

Q. How could it be otherwise?

A. There might be compensated errors in the result, so a slight error in one place would be compensated by the slight error in another one.

Q. I said one factor?

A. If there is only one factor wrong, then the results might be wrong in proportion to the error which is brought in by the original error, is that what you want me to understand? I think we are perfectly clear on that point, I don't quite get your point.

Q. So that if there are errors in the factos which you have designated as showing similarity in the Medrano area and Schuler Jones area then it might not be so similar as you now think, isn't that true?

[fol. 1101] A. Yes, sir, I think that is entirely possible, yes sir.

Q. Now what data have you used to determine the type of reservoir drive or energy in the West Cement Medrano area?

A. What data, I think I can't answer that question. The production of gas from the field which took place the period of 1930 and 1943 resulted in a decline of the pressure in the reservoir. The decline which might not have taken place if the reservoir had been under a water-drive, which leads me to conclude that the field is not under a water-drive but is under a gas drive. Does that answer the question?

Q. Well, I don't know,——

A. That is the best answer I can give,—I am sure that I see your question,—I am trying to help.

Q. I believe you testified that the gas-oil ratio reflected depletion, is that correct?

A. It may, yes, the production of the oil fluid from the reservoir reflects depletion but,——

Q. I mean the increase in the gas-oil ratio, increase in the gas-oil ratio oil production would tend to reflect depletion, or is it the other way around?

A. No, it reflects depletion in that vicinity, yes sir.

Q. You mean when the percentage of gas produced by the oil increases, that would indicate depletion in the oil reservoir?

A. Yes sir.

Q. Are you familiar with the gas-oil ratio performance of wells in the oil zone in the Medrano area?

[fol. 1102] A. I don't believe I have that information at my immediate command, no sir, I do not.

[fol. 1103] Q. If there are wells in the oil horizon which shows a very natural increase oil-gas ratio, as production of oil, proceeds from such well, would you say that that is a reflection of substantial depletion of the area around that particular well or wells?

A. I could not say substantially, unless we receive, say quantitative, unless you give the actual figures. The gas produced in excess of the gas dissolved in the oil is the gas that comes out of the oil still in the reservoir and to that extent represents the loss of gas and the retention of oil that may not be otherwise recoverable.

Q. You are not familiar with the gas-oil ratios shown by the performance of the wells in the oil zone?

A. I am really not up to date on that, no, sir.

Q. If there are wells in the oil portion of the sand involved which have produced zero, will say 400,000 or 500,000 barrels of oil without any increase in the gas-oil ratios, would you say that there was any indication that would respect to these particular wells, there was no depletion in that area.

A. Oh, no, if they have produced 400,000 or 500,000, that immediate area is depleted of 400,000 or 500,000.

Q. In answering the question, are you taking into consideration gravity and drainage that exists in the area?

[fol. 1104] A. Gravity drainage is relative, a minor fact movement in the reservoir and the pressure is created, has pressure differential at the well and at the reservoir and high pressures at the reservoir.

Q. Wouldn't the facts given you in my question, indicate that gravity drainage would overcome the completion of such a thing at the well?

A. No, sir.

Q. How, also, could you account for the fact that there is no increase of gas-oil ratio from such a well.

A. There is not an awful amount of production from a well of 400,000 barrels from a sand 95 feet thick.

Q. Is that your only answer, doctor?

A. Yes.

Q. Now, estimating 25% recovery under normal operations in the Medrano area, do you take into consideration gravity drainage.

A. Not especially, not necessarily.

Q. You realize that the producing formation has a deep pitch in this area?

A. Yes, sir.

Q. In view of that fact, wouldn't you like to re-estimate what might be recovered, expected to be recovered, of normal operations in this area?

[fol. 1105] A. No, sir.

Q. What would you say with respect to, we will take the steps Hartshorn lease, for instance No. 1 well, on August 5th, 1946, had a gas-oil ratio of 261 cubic feet per barrel and on February 5, 1947, had a gas-oil ratio of 367 cubic feet per barrel, would that indicate to you anything with respect to depletion of that particular lease.

A. I would say this, it would indicate that some oil or some gas was moving to the well and return some of the oil behind it.

Q. Well, would that indicate to you there was oil depleted of that lease?

A. Every barrel of oil and gas and every cubic foot of gas produced involved, the depletion of the reservoir.

Q. I don't believe that you have answered my question.

A. That is the best I can do.

Q. The increase in the gas-oil ratio that indicates substantial depletion of the reservoir from which that well feeds——

A. I don't think so. It hasn't much more than the amount of gas in solution at that time.

Q. Referring to Phillips-Hartshorn No. 2 on August 5, 1946, it had a gas-oil ratio of 316 cubic feet of gas per barrel of oil, while on February 5, 1947, it had a gas-oil ratio of 321 cubic feet of gas per barrel.

[fol. 1106] A. 316 and 321?

Q. Yes.

A. That is within the limit of measuring the equity of the amount of gas produced.

Q. Assuming that they are accurate?

A. I call them the same figures.

Q. Even though the measurement shows a distinction?

A. I have measured a lot and when you get one that is 316 and the other 321, they are practically the same thing.

Q. Now, in the same area, the Palmer-Sturba No. 4 well, which during the production of some 400,000 barrels of oil was maintained a constant gas-oil ratio, you would say, would you not, that there would be no more depletion reflected around the Phillips-Hartshorn well than the Sturba well?

A. No, because the figures are constant, even the figures that you gave, 5 cubic feet, we don't measure them that accurately in the field.

Q. You heard the testimony and examination of Mr. Montgomery and Mr. Kaveler, if the record indicates that they have not properly discounted the sand thickness for many feet of tight of low permeability sand, so that the average porosity is much lower than used in the engineer's report in Segment A, for example, then your calculations of oil in place, would be in error, wouldn't they?

[fol. 1107] A. They might be, yes, sir.

Q. What is the engineering data which supported your extension of this line, that is, in a curve, you say that so many years, if now you maintain that objection of gas that the pressure will be maintained at such and such a figure and so much oil will be produced, what engineering data do you rely upon, on making such theoretical estimates?

A. It is not a theoretical estimate. I had charge of making estimates for one company. I didn't have to guess at what we drew. I know what we did. That is the basis of the extension.

Q. Then it is a matter of slide rule engineering.

A. No, sound experience and practice.

Q. Then what data did you use.

A. The judgment which I have acquired in my long experience of that character.

Q. Of course, you don't know what the Schuler-Jones pool is going to produce in oil?

A. I know it is going to be more than 50 million barrels.

Q. You said it had produced what?

A. Over 40 million barrels and is now producing 8,000 barrels per day.

Q. Doctor, I believe you testified you were familiar with the Isopac map, it's Exhibit 72.

[fol. 1108] A. I don't think I said I was familiar with it, I said I had seen it, maybe there is no difference; I don't know.

Q. You are the only one that would know, Doctor, can you see Exhibit 72 now on the board?

A. (The witness goes to the blackboard) I believe it is Exhibit 72 to which you referred.

Q. Will you look at the Isopacs on that, briefly?

A. (Witness examines the exhibit) I have so done.

Q. If you could erase from your mind that this was supposed to be an applicant's viewpoint, of one pool, what would you say of the location of those faults constituting barriers between the several segments indicated by such failure lines.

A. I don't know whether I can answer that question or not. You are going into the field of geology and I am not a geologist. In drawing any sort of map that shows contours, you would have to depend on the judgment of the person drawing the map. I notice lines on that map that go to the right, that is the opinion of the man who drew the map. I would not agree with that map, if I made a bottom-hole pressure map.

Q. You would if they were facts?

A. Facts are facts. At the particular spot where the controls are gotten, the rest is judgment.

Q. If these controls show different pressures on either [fol. 1109] side of the barrier, you would reflect them on the map that way?

A. If the barrier existed, faults in general swerved to production. Sometime the fault is formed and the bulge material is highly impervious and it is highly impermeable to the movement of the fluid. We have both of those things existing in a measure.

Q. I take it from what you have said that you would not want to express an opinion on the exhibit, Exhibit 72.

A. I haven't studied it and I don't think that my opinion would be worth anything.

Q. From the Medrano, West Cement Medrano area, is actually by segments sealed off, would that change any opinion which you have expressed here with regard to an attempt to unitize and operated as one unit by secondary gas recovery.

A. I don't think so.

Q. You realize, of course, do you not, doctor, that if those barriers, I mean if those segments constitute pervious barriers, then those areas would have to be operated by five units.

A. No, sir.

Q. If these are impervious barriers, how could you operate this except as five separate units?

A. By injecting gas higher up the structure.

Q. In each separate unit?

A. Yes, sir.

[fol. 1110] Q. With one central plant?

A. And pipelines to distribute the gas.

Q. It would then cease to be one common source of supply?

A. I don't think so.

Q. You mean in your opinion it will be one common source of supply if these faults constitute impervious barriers?

A. Yes, sir.

Q. And, in your opinion, then if that situation exists then you think that the equities are properly distributed as here proposed by applicants?

A. Reasonably so, yes, sir.

Q. Even if the field of all this area is separated by faults, constituting pervious barriers?

A. I don't assume something to an answer which I doubt. If these are facts, I will agree with you as to the conclusions.

Q. That is all.

Reford Bond, Jr. cross-examines the witness further:

Q. Doctor Stephenson, I believe you testified that *your* opinion given on the feasibility of unit operation in the West Medrano pool was based on the facts and as set forth in the engineer's report which was marked Exhibit 71, in this matter, is that correct?

A. To a certain extent, based on those facts and my own experience in connection with repressuring projects.

[fol. 1111] Q. But as far as actual field data is concerned, you had no other than that described in Exhibit 71, is that correct?

A. In part, Exhibit 71 and production data supplied me, also as to the history of the field now shown in the exhibit.

Q. And who supplied to you that data?

A. I believe the engineering committee provided me with that information.

Q. And did it propose to be taken from committee records or Commission records?

A. I can't answer that question, Mr. Bond, I don't know.

Q. The persons who furnished you with the data and information advised you that, that is correct?

A. I wrote a letter to Mr. Kaveler for the information, that letter came to me through Mr. Woods.

Q. I believe that you testified that there was a value attached to gas as a reservoir energy factor for the production of oil, is that true?

A. I think that is a very nice way to put it, Mr. Bond.

Q. That is your testimony, isn't it, doctor?

A. I wouldn't put it quite that way, but that is the general principle, I believe.

Q. And under the proposed plan of unit operations as you have studied it and examined it, the gas which is now [fol. 1112] in the reservoir will be used again and again in producing the oil from the reservoir.

A. To a certain extent, yes, sir.

Q. And, according to the plan, probably additional gas obtained from other sources of supply will be injected in the reservoir and used in a small manner?

A. Yes, sir.

Q. And that is your understanding of the plan?

A. Yes, sir.

Q. Now, what, in your opinion, is the value of the gas in dollars and cents so used?

A. I have made no attempt, Mr. Bond, to compute anything in the entire problem in terms of dollars and cents, only the resources themselves.

Q. You mean by that, you are not qualified to answer that question?

A. I don't think I am. I haven't paid any attention to that, that is a special matter.

Q. I will ask you to state to the Commission whether or not the gas used for producing the oil has a dollars and cents value for that particular production for that use.

A. I think it does have, yes, sir.

[fol. 1113] Q. Now, will you kindly examine Exhibit 53, or the copy of the Exhibit and particularly Table 2, which is on the fourth page of the Exhibit and is marked page 1?

A. I have the table before me.

Q. Now, I call your attention to the column which is marked "80 per cent, column 1", "Column 2, 20 per cent", —have you examined the data information and procedure as set forth in that particular part of Exhibit 53?

A. I don't think I have, in the light of your question. I have examined the particular principle but not as to the particular properties or particular companies,—have I answered your question properly or not?

Q. Yes, but have you examined as to the method or particular things that is done in Column 80 per cent Column 1, and 20 per cent, Column 2?

A. (No answer)

Q. Now, we are not talking about mathematical calculations, but principles?

A. Well, as I understand the column headed "80 percent, in column 1, I have made no computations of the value involved, no.

Q. Do you understand what the divider, I mean the person who was dividing the oil and gas among the persons entitled thereto,—what do you understand he was doing when he divided that.

A. Well, he was trying to divide the total amount of oil [fol. 1114] and gas on a percentage basis and then convert

it, and then in the next column, the current income, to the extent of 20 per cent, so that the total of those two columns will give the total.

Q. Do you consider the total of 20 per cent, which is a factor in arriving at the equity, as being good engineering practice?

A. Yes.

Q. Do you think 20 per cent would have been good engineering practice, or twenty five per cent would have been good engineering practice?

A. Twenty five per cent is good engineering practice too.

Q. Well, do you mean to tell the Commission that there are numerous percentages which could have been used and that still would be good engineering practice?

A. I think so.

Q. What if that had been fifteen per cent, would that be good engineering practice?

A. Yes, fifteen per cent could have been used.

Q. And Twenty-five percent could have been used?

A. Yes.

Q. And that figure would have been good engineering?

A. Yes, I do.

Q. Well, would you say that thirty per cent could have been used?

A. Yes, thirty per cent could have been used.

Q. Would it have been good engineering practice?

[fol. 1115] A. Yes, I might even go to fifty per cent.

Q. Well, you, after careful consideration?

A. Yes, that might be good engineering practice too, usually it would be better to give the larger percentage and make the rate of production what the State allows the property to produce.

Q. Going down the scale, would you go as low as ten per cent?

A. I don't think so.

Q. You wouldn't throw the allowable out the-?

A. No, I don't think that would be quite fair.

Q. You wouldn't go any lower than 15 per cent, then?

A. Well, that, I think would be reasonable.

Q. And, from there to fifty?

A. No,

Q. Well, would you go as strong as forty five?

A. No.

Q. Forty?

A. Well, I might stop at forty.

Q. Now, we are talking about this particular Plan in this particular field,—you think there is an allowable of between fifteen to forty per cent, that that would be reasonable?

A. Well, somewhere in that range.

Q. Twenty per cent?

A. No, I wouldn't say that twenty per cent would do that,—does that answer your question?

Q. No, I want you to stay with good engineering practice,—I'll ask you to state if the operation that I am asking [fol. 1116] you about is good engineering practice or is it engineering practice, at all?

A. I don't believe, it is practice at all.

Q. Is it engineering practice at all?

A. I don't believe I can answer that. That gets into the question of what constitutes good engineering practice, I don't believe I can answer that.

Q. I'll ask you this, then,—if it is a factor used in arriving at the equities between the parties?

A. Yes, it is.

Q. And I'll ask you if you didn't state on direct examination, in response to your Counsel's question, in substance, that the factors used in arriving at conclusions reached was good engineering practice?

A. No, I didn't say that, Mr. Bond, and, of course, the best evidence of what I said is the record and I would ask the record to be read, both as to the question and the answer.

Q. Well, that it's up to your Counsel.

A. Well, I have the right to ask this, as a witness.

Q. Well, I am just asking the witness if he could say the same thing twice.

Judge Brown: Well, if you used the word, "reasonable".

Q. Well, now, Mr. Witness, I will ask you if the factors used in arriving at the equities arrived at was good engineering,—were good engineering practice?

[fol. 1117] A. Well, I can say that is engineering practice and I think it complies with the law.

Q. Could you tell the Commission the process of reasoning that you followed in arriving at that 20 per cent?

A. I did not arrive at that 20 per cent.

Q. You have been handed——

A. You have handed me this Exhibit, I didn't engineer this 20 per cent into Exhibit 53.

Q. Do I understand you to say that you have not so examined Exhibit 53 to the extent that you are able to follow the processes used in arriving at the conclusion reached therein, so you can advise the Commission?

A. I think I testified earlier that I have paid no attention to the distribution of values in dollars and cents.

Q. Do you mean as between the persons entitled to the oil and the gas?

A. As between anybody, I have not paid any attention.

Q. Have you paid any attention to——

A. ——to the matters that are expressed in quantities of hydro carbon,—that I have done.

Q. I will ask you if Exhibit 53 deals with such matters?

A. I believe the first part of it does,—through column 8. after column 8 you will find that it deals with dollars and cents, and, with that I have been concerned.

Q. Then, any testimony you have given with reference to Exhibit 53, after the hydro carbons were converted into [fol. 1118] dollars and cents you wish to retract because you didn't go into the matter of the conversion of the hydro carbons into dollars and cents?

A. (No Answer)

Q. Well, now, you accepted the sand thickness data, as reflected on the Isopac Map, as correct?

A. Yes.

Q. You did not examine the contour lines with reference to their control, with reference to control lines, to determine whether or not you would have placed those contour lines in that particular relation?

A. No, sir, I did not.

Q. But you merely accepted them as it was prepared by the Engineers or Geologists who prepared them?

A. Yes.

Q. And your testimony given to this Commission has been entirely based on the truth and correctness of the facts

and figures given to you by Phillips Petroleum geologists and engineers?

A. Well, that is slightly more complex, —I was depending on this information for the basis facts as to the area involved—the statements involved, the *prosity* involved—

Q. And the oil saturation?

A. No, I computed the oil saturation by myself.

Q. And, in the event there is an error in the event you should work these matters out yourself and should differ with other engineers and geologists, then your testimony might change, according to difference in the original data and facts?

[fol. 1119] A. As an engineer, I would be obliged to base my conclusion upon facts and if new facts were developed that might make it necessary to change my conclusions.

Q. Now, Doctor, your experience with Unit operations has led you to study well spacing, hasn't it?

A. No sir, well spacing has nothing to do with Unitization.

Q. Let me ask you another question, have you studied, for instance, the distance that should be allowed between well bores—

A. Oh, do you mean have I considered what wells should be drilled?

Q. Yes, and how far apart, where they should be located?

A. Well, in general they should be located as far down dip as possible, in order to take advantage of drainage, due to gravity and to take into consideration the pressure,—and in general they should be located well down dip but as to locations I don't think I would go into well spacing, at all, but would try to make use of the wells already drilled, and then, in the light of engineering experience with Unitization programs I would drill such wells as the engineering data would indicate would be necessary.

Q. Well, now, what engineering data would indicate that?

A. One of the facts evolved might be if the gas oil ratio, —another would be the production of the well, another would be the bottom-hole pressures. Those things will give [fol. 1120] us information to guide us as to where wells should be located in the future.

Q. Has your experience gone far enough to permit you to state any particular lateral distance between well bores

from which you expect to produce oil to Unitize fields such as the West Cement Medrano field?

A. I think I answered that when I said I would produce from the wells already drilled and then drill others if necessary.

Q. Well, let's assume that the West Medrano pool was not developed at all,—how many wells would you think you would have to drill to determine the extent of a pool similar to the Medrano pool?

A. It would depend on where the wells were drilled,—ten, sometimes, might outline the structure and, in another case fifty wells might be required.

Q. Do you think ten wells would outline the structure in the Medrano pool?

A. I think we might do a pretty good job with ten wells.

Q. Now, Mr. Witness, I will ask you to assume this state of facts in order to determine if your engineering science has progressed far enough so that you can determine from, we'll say, ten wells drilled in a pool similar to the West Cement Medrano pool in size and generally similar to that pool, how far apart would you drill the well bores from which you expect the oil to Unitize the production of that pool?

A. I am sure I am lost—I don't see how you can Unitize [fol. 1121] a pool *a pool* when you don't have a pool—I don't see how you can ask that question and not make a jackass of yourself.

Q. Well, Doctor, isn't it a fact that engineering science for the development of Unitized pool operations has not developed far enough yet for you to say laterally how far apart the wells bores from which the oil is to be produced should be?

A. I haven't made any statement on that, I have made a statement to that effect as it applied to a field as it now is and if it is necessary to drill additional wells I think they should be drilled.

Q. Then do I understand your testimony to be that there is not and can be no definite set lateral distance between well bores from which to produce oil for that purpose?

A. That's right,—I agree with that statement.

Q. But I will ask you if it is a fact that the Oklahoma City field has shown a recovery of 41 per cent?

A. I believe it shows forty one per cent of the total estimated oil.

[fol. 1122] By Mr. Adams:

Q. Dr. following the line of examination immediately perceding my question, wouldn't changes in gas-oil ratio reflect in production fgom wells as now located, suppose that they were very materially changed, wouldn't that indicate the necessity of either drilling new wells or relocation of two wells?

A. That might indicate that and it might not indicate that production should be faken from ether wells but as the gas-oil ratio weren't so high, that is a common practice in the unit pool.

Q. In an area similar to that herein involved what is the distance which oil may be economically washed by reasonable gas pressure to the well bore?

A. Well of course oil is not forced by a reasonable pressure. That statement doesn't mean anything from a standpoint of engineering. Oil moves from one place to another because of different pressure between the two points. There must be a different in pressure between the two points before any movement takes place.

Q. Yes, I understand that, but after all you are going to increase the pressure by injection of gas, aren't you?

A. That's right.

Q. Have you studied the exhibit here which reflects that it is not contemplated to establish the original pressures but the plan rather is another attempt to maintain as near as possible the present pressures.

[fol. 1123] A. Present pressure in the gas zone, that is right.

Q. Now assume that the present pressure in the gas zone, in the various segments here is maintained at approximately the same pressure as now exists, how far would you say would your oil wells could be from your gas well, your input well and reasonable expect to recover the amount of oil that you say might be recovered by secondary recovery operations by gas injection.

A. I think the best answer I could give to that, Your Honor, is my own experience in the interference between wells. I have actually *measure* the pressure in a whole group of wells in a field which may be one operated while all the rest are kept quiet, not operated but in which they are all operated except one and that one in the center and have measured the take in pressures which resulted in the movement from between those places. The most I have found I could measure was around 3600 feet between wells, that is the ratio of distance but that was sufficient to indicate that it was probably *move* further than that. I don't believe information how far it could be,—I have measured it up *no* 3600 feet between wells.

Q. You wouldn't recommend that as a practical operation?

A. I am not recommending anything as a practical operation, I am making a statement of facts.

Q. I am talking about practicalities, not theory, what distance if you know, would be a practical distance from which to force by gas pressure injected in a gas-well to force oil into the oil well bore for production?

[fol. 1124] A. I don't believe the question can be answered with that limited amount of material as a premise.

Q. Well, take the Medrano field, you say you are familiar with it, what would you say with respect to that question with regard to the Medrano area?

A. Well, I could say oil would pull a long ways. That is rather a vague statement, I realize it, I don't believe I am quite in position to say how far it would be in actual feet.

Q. That is all.

[fol. 1125] 23rd Day of May 1947

Colloquy

By Chairman Bond: You may call your next witness.

By Mr. Williams: Applicants have reached the point where we have introduced our evidence in chief and are ready to rest with the exception of a recalculation that is being made with respect to the footage, etc., and the change in equities brought about by the drilling of the Sterba well which Mr. Kaveler referred to in his testimony the other day, which calculation has been delayed some-

what by getting the surface survey, but that is a matter that can be introduced later in the hearing. We also understand that Counsel desires to further cross examine Mr. Kaveler, and he will be here at a later date for further cross-examination, and then of course it may be that are some other minor matters of evidence we might want to introduce at a later date, either by way of rebuttal or [fol. 1126] maybe evidence in chief, but aside from that we are ready to rest at this time.

By Chairman Bond: Counsel rests conditionally. Do you gentlemen desire to offer your testimony on a conditional rest or do you want to wait until his case is completed.

By Mr. Reford Bond Jr.: If the Commission please, as far as Mr. Tom Potter's concern we are not in position to put on any evidence today because Mr. Potter is not here and we didn't anticipate that the case would progress as it has this far. Mr. Potter is in Texas and I doubt very seriously if we can get him as a witness. As to the royalty owners, we prefer to complete our cross examination before offering any testimony. As to the over-riding royalty owners we have the same proposition confronting us.

By Mr. Adams: If the Commission please, of course we didn't know just what the situation was going to be. We agreed with Judge Lowe of the Gulf Oil Corporation that the Palmer Oil Corporation testimony would not be introduced today because Judge Lowe had to appear before the National Labor Relation Board as I understand it as an examiner or something in that respect and that was with Mr. William's knowledge,—we talked about it. [fol. 1127] Judge Lowe couldn't be here and he didn't want us to introduce our testimony until he is present.

By Mr. Williams: That is the respect to the Sterba lease.

By Mr. Adams: That is true, our testimony deals largely with that subject, so under the circumstances, I know the Commission is busy anyway, I had no desire to delay it, I didn't realize we would be this kind of a situation on Friday.

By Chairman Bond: You gentlemen can offer any testimony in rebuttal that you desire, but the Commission wouldn't require you to go into rebuttal testimony until the Applicants had rested.

By Mr. Reford Bond Jr.: We would be glad to offer our evidence to refute the Applicants evidence however there are some matters we still wish to listen for testimony on cross examination before we would be in a position to offer our evidence to refute the Applicants Plan, for that reason it would be probably unwise to proceed for the Applicant until we had completed our cross examination.

By Chairman Bond: Unless you gentlemen can agree The Commission will not force Counsel to go into Protestants evidence until you have entirely rested.

By Mr. Reford Bond, Jr.: We would put off some [fol. 1128] royalty owners and let them state their objection to the Commission.

By Chairman Bond: Is that agreeable?

By Mr. Williams: That's all right.

(And at this time the Commission took a recess for ten minutes)

[fol. 1129] Whereupon, Mr. L. A. Davis, of lawful age, being first duly sworn, testified as follows, to-wit:

Witness examined by Reford Bond, Jr.:

Q. State your name to the Commission.

A. L. A. Davis.

Q. Where do you live?

A. Chickasha, Oklahoma.

Q. State to the Commission what your position is in this proceeding.

A. Well, in the proceeding, I am selected the President of the Caddo-Grady Land and Royalty Owners Association, with the view of leading this campaign in our effort to defeat this compulsory and planning of this unitization, to give the land owners an opportunity to have something to do with it.

Q. How many members does your association have?

A. Well, we have something like on cards signed, but we have 200, but we have numerous folks supporting us who do not have memberships and who are land owners of Stephens, Grady and Caddo counties, they are members directly or indirectly.

Q. And all the royalty owners who have filed pleadings in this matter, they are members of your association?

A. I believe they are.

Q. Do you represent them in this litigation?

[fol. 1130] A. To the extent that I am President of that association and they keep in contact with me and me with them.

Q. I will ask you if you are the executive that is handling all matters concerned with the defeating and resistance on behalf of the royalty owners.

A. I am.

Q. And you are also handling the matter for the royalty owners and Tom Palmer, one of the operators?

A. I am.

Q. Now, is there anyone else who is assisting you in the manner of handling the litigation in chief?

A. The counsel.

Q. Outside of counsel?

A. We have all of those gentlemen, we are attempting to convey information such as we have and attending our meetings.

Q. Would you say that anyone of them is handling the litigation in chief?

A. No.

Q. You are the only one?

A. Yes.

Q. Now, it's been suggested that this matter be continued for further hearing for the third of June, 1947, will you state to the Commission whether this date is agreeable with you and why?

[fol. 1131] A. For the reason that I have made plans in California during the first half and probably a little more than the first half of June, I don't know but what it would take all of June.

Q. What is the nature of your business in California?

A. I have a partner and friend who has been in business with me in Oklahoma and California, and we have a lot of business together, and indirectly he handles the business there and that is in regard to some subdivisions in California and we work together. The same as he is interested

here and wants me to discuss and work out some subdivisions in California.

Q. Does it involve money?

A. Money and time.

Q. It involves your own personal money and personal business?

A. It will.

Mr. Williams cross-examines the witness:

Q. This business which you refer to is a conference with your partner?

A. Yes, and with regard to extending the subdivisions and building houses.

Q. What day do you plan to leave for California?

A. We are expecting to go about the 25th of this month. I am going to drive through.

Q. There is no set date at which you have to be in California?

[fol. 1132] A. Nothing, only I told them that I would be there approximately the first of June and he is waiting for me to get there and we are trying to dispose of the things before the slump comes.

Q. You have been pending fixing the date after this hearing?

A. Yes.

Q. Is there any reason why that could not be set after the 5th of June?

A. I suggest that you and I keep in touch with each other and then when I get back——

Q. Is there any reason why your trip to California cannot be delayed until after the fifth?

A. Yes, I really ought to be there before the 5th. I imagine around the 25th of this month, I will leave.

Q. What is the name of your partner?

A. Everett Harvey.

Q. These are merely conferences?

A. Business deals.

Q. The date hasn't been fixed?

A. The exact date hasn't been fixed.

Q. You say that it may take all of June?

A. I don't know. I might wind it up sooner, I would

like to get back because it means a lot to me. I don't contemplate it being drawn out as this will be.

[fol. 1133] Q. You are not an engineer or geologist?

A. No, not licensed.

Commissioner Weems: Are you a landowner?

A. I have some land and some producing wells.

Mr. Williams: What leases are you interested in in this pool?

A. In the Ruxtle and Potter-Davis.

Q. What interest under the Potter-Davis?

A. All but the lease interest.

Q. That is a twenty-acre tract?

A. Yes.

Q. There is no connected gas well?

A. Yes.

Q. You want to tell the Commission that the matter in California is one thing that could not be delayed until after the 5th?

A. Yes.

[fol. 1134] Q. You want to tell the Commission that that matter is of some importance to you?

A. I think it is.

Q. Now, precisely what are you going to do out there?

Mr. Reford Bond, Jr.: If the Commission please, we believe that question——

Chairman Bond: He might ask him what is the magnitude of the deal, something of that nature.

A. I have a subdivision out there that runs into *to* thousands of dollars and it means a lot, we want to get out there where we can dispose of that,—I would have been out there before this time except for this case.

Examination by Reford Bond, Jr.:

Q. Do you believe that if you are not there you will suffer loss?

A. Yes, sir, I will suffer loss.

Reporter's Note: After conference participated in by the Commission, Counsel for Applicant, Counsel for Protestants

and Royalty Owners, the further hearing of this case is continued until July 1, 1947.

The Commission adjourned to reconvene on May 27, 1947.

[fol. 1135] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

(Title omitted)

TRANSCRIPT OF HEARING—JULY 15, 1947, 10:00 A.M.

[fol. 1136] Chairman Bond: Are you gentlemen ready to proceed in C.D. 1308?

Mr. Williams: The applicants are ready.

Reporter's Note: Whereupon, all parties announced ready to proceed in C.D. 1308.

Mr. Williams: In the proof it developed that the Palmer Sterba No. 7 well had been drilled since the beginning of the hearing which gave information to the sand thickness, which will call for a slight revision of a table of percentages, that table is now ready and I believe the engineers for Palmer and engineers for the applicants have worked together on that information and we have that table ready this morning. In view of the question that arose in the West Edmond hearing in the plan of substitution, then we are going to ask leave to file not an amended petition, but an amendment to the petition, so it will place the matter directly before the Commission and that need not interfere in the proceedings at this time and before the closing of the hearing this will be filed and we will not delay the hearing.

Chairman Bond: Counsel will probably ask that you offer your evidence now rather than hold it open.

Mr. Adams: If the Commission please, I am sure that Mr. Williams understood the facts stated as I understood [fol. 1137] the recomputation was not prepared in cooperation with either the geological representatives or the engineering representatives of Palmer Oil Corporation; I may be in error, the opportunity to attend the meeting was tendered and then the meeting was held without his having an

opportunity to be present because the work had been done when the representative had gotten there and he said he either had to take it or not take it.

Chairman Bond: Gentlemen, there may be something that will be a matter of proof before the case is over.

Mr. Adams: I wanted that statement in the record.

[fol. 1138] Whereupon, Mr. A. J. Montgomery is recalled to the stand:

Mr. Williams examines the witness:

Q. State your name.

A. A. J. Montgomery.

Q. You are the same A. J. Montgomery who previously testified in the hearing?

A. I am.

Q. You are acquainted with the locations and facts and circumstances of the drilling of the Sterba No. 7 well?

A. I am, yes, sir.

Mr. Adams: If the Commission please, I think that that calls for a conclusion, I think that the witness should testify what he knows about it.

Chairman Bond: He's only trying to qualify him now.

Mr. Williams continues with the witness:

Q. Do you know where that well is located?

A. I believe the southwest ¼ of 35-6N-10W, the Sterba lease.

Q. You have been on the location of that well?

A. I have, yes, sir.

Q. Do you know from what horizon that well is producing?

A. From the best of my knowledge, the Medrano sand.

Q. Mr. Montgomery, did the drilling and completion of that well result in any change in information in respect to the sand thickness on that lease and immediate vicinity as far as the Medrano sand was concerned?

[fol. 1139] A. It did, yes, sir.

Q. Have you or your committee or anyone that you know have made a recomputation of the sand thickness as a result of that information?

A. The geological committee corrected that map as regard to the structure map at the top of the sand base and sand and sand thickness map.

Q. Are the maps to which you make reference the maps that are introduced in this hearing as Exhibits 54 to 57, inclusive?

[fol. 1140] A. Yes, sir, these are the ones that were corrected.

Q. Mr. Montgomery, who participated in the correction of these maps,—you said the committee,—who do you mean, who do you refer to when you say that?

A. Lawrence Muir, of the Amerada, Rudolph Brauchli and A. H. Richards of the Anderson-Prichard, J. T. Richards of the Gulf, Walt Moreman, W. L. Moreman, Curtis A. Wallace and myself.

Q. Did anyone of the behalf of the Palmer Oil Corporation participate in that work?

A. Not in that work, no, sir.

Q. Do you have with you the corrected maps to which you have made reference?

A. Yes, sir.

Q. Now, as I understand your testimony, Mr. Montgomery, you personally participated in making the correction, Exhibit- 54, 55, 56 and 57?

A. I did, yes, sir.

Q. Now, will you refer to those maps which have been marked Exhibit- 54-R, 55-R, 56-R and 57-R,—I wish you would explain to the Commission what those maps are?

A. These are the corrected maps as corrected because of the drilling of the No. 7 Sterba of the Palmer Oil Corporation.

Q. Are those the maps to which you referred and upon which you personally worked?

A. Yes, they are.

[fol. 1141] Q. Now, explain to the Commission just wherein these maps are corrected and how they vary from the original Exhibits 54 to 57 inclusive?

A. In the No. 7 Sterba we found the Medrano at a depth of 4371.

Q. Now, on which Exhibit does that appear?

A. Exhibit 54-R, the minus is shown. On Exhibit 55-R the base of the Medrano is found to be minus 4467, changing the contours on the base of the Medrano sand, and Exhibit 56-R, which is the Isopachous map showing the thickness of the gas sand, which influences the Isopach lines only to a minor degree, as the No. 7 Sterba was entirely in that oil zone. 57-R,—the thickness found in the No. 7 Sterba, 96 feet of oil sand makes a change in the Isopach lines, more thickness having been given to the local area.

Q. Do you have any opinion as to the question of these maps?

A. This work was done to the best of our ability and it was done in the same manner in which all other similar data was examined in the field.

Q. And is it and do these maps in your opinion show a correct representation of the facts they purport to show?

A. Yes.

Mr. Williams: We offer at this time Exhibits 54-R, 55-R, 56-R and 57-R.

Mr. Adams: We object to the introduction of these Exhibits for the reason that the witness hasn't testified to [fol. 1142] any of the facts with relation to this Sterba No. 7 well.

Reford Bond, Jr.: We object to the introduction of Exhibit 54-R, 55-R, 56-R and 57-R, because the statements of the witness are merely inferences based on inferences which are material guesses as well as on the ground upon which Counsel has objected.

Chairman Bond: Were these Exhibits made by you or under your supervision or direction?

A. Yes, sir.

Q. Where did you get the information from which they were made?

A. I was at the well and looked at the samples. Mr. Palmer was nice enough to give me a copy of the electric log and he turned the samples over to me and I went to

the Ardmore sample—and these samples were examined by each member of the committee except one who made these maps, Mr. J. T. Richards of the Gulf didn't feel at that time like looking at the electric log,—because I furnished him one.

Q. Did you, yourself, examine the electric log?

A. Yes.

Q. Did you, yourself, examine the samples?

A. Yes, sir.

Q. And you made these maps, the making of these maps is the result of that study?

[fol. 1143] A. Yes.

Q. And is that the same information that was used in compiling the original maps of which these are corrections?

A. Yes.

Examination by Mr. Willams:

Q. And were you also at the well at the time the sand was measured?

A. No, at the time the top of the sand was drilled in, I was there the next day. I looked at the samples and the—at the time I was there they were slightly below 5900—an examination of the samples backed up the hole, the historical is that of the well at approximately 5875, as I remember, they lost circulation and considerable trouble was had,—cottonseed hulls and I don't know what all was put in the well and for a number of feet the samples were not satisfactory. About 5889, as I recall they pulled out of the hole and the correct measure was made when they measured up the drill pipe after they had lost circulation.

By Mr. Adams:

Q. When they measured, do you know what the correction was?

A. As I recall it was 9 feet, although it may have been 7,—or 9 foot correction is what was made because of the fact that they lost circulation at that point. They had been in this Cherdy conglomeratic sand and by that time I assume that they ought to be very close to the sand and the [fol. 1144] fact that they did lost circulation at 5874—I

think they lost circulation,—I think it was a 7-foot correction,—that made me tell Mr. Palmer at that time that the top of the sand was as high as 5857, considering the correction that was made at the 5900, the samples *was* very clean and the Medrano samples were good. Later on when the samples were given to me and were examined I then placed the top of the sand at 5876 and assumed that included the loss in circulation. The circulation may not necessarily have been lost in the bottom of the hole, or was not necessarily the top of the sand.

Q. Mr. Montgomery, can you look at the two sets of maps before you and tell the Commission the difference in the thickness as reflected by the first set of maps and that of the second?

Reford Bond, Jr.: If the Commission please, no ruling has been made.

Chairman Bond: No, I think Counsel is merely attempting to qualify the witness further.

Mr. Williams: I will renew the offer of the Exhibits.

Reford Bond, Jr.: We make the same objection.

Chairman Bond: Objection is overruled.

Reporter's Note: Protestants accept to the ruling of the Court.

Q. Now, Mr. Montgomery, can you give the variance, point out the variance of the thickness as reflected by the [fol. 1145] maps at the Sterba No. 7 well location.

Mr. Adams: And can you put up one of those Exhibits on the blackboard,—I would like to see how you do that?

Q. Now, Mr. Montgomery on the two maps on the board, which are Exhibit 57 and 57-R, will you point out to the Commission wherein the difference appears in those two maps?

A. The No. 7 Sterba well does not appear on Exhibit 57, but it is on 57-R. The fact that there is no control at that point except by thickness of 125 feet shown on 57-R, with a 100 thickness line is shown in the SW Quarter of Section 35. The condition caused by the drilling of the No. 7 Sterba caused the 100 foot thickness line to go to the Southwest and the line of 125-foot thickness to go to the West.

Q. Mr. Montgomery, did you or your committee or anyone at *you* direction cause a topographical survey of the Sterba lease to be made?

A. The South Half of the Sterba lease was surveyed.

Q. By whom was that survey made?

A. My understanding is that it was made by the County Engineer of Comanche County,—Mr. Richards of the Gulf contacted him and had the work done,—I believe.

Q. Was your committee furnished with a map by the County Engineer?

A. We had a topographical plan.

Q. What information was shown on it?

[fol. 1146] A. Elevations at various places along the Sterba,—South side of the Sterba lease.

Q. What was done with that map by you?

A. Lawrence Muir, Mr. Stevens and I made a trip to the lease and driving over the lease we contoured the topography at 5-foot infervals, made a map and superimposed it showing where the top of the sand would be encountered at a lower depth of 6000 feet.

Q. Did you personally do that?

A. Mr. Muir used the pencil but he had a lot of that advice from Hollis and myself.

Q. Did you personally see the work done?

A. Yes.

Q. It was your opinion, or do you have an opinion, as to the correctness of the map?

A. My opinion, is that it is reasonably correct.

Q. I'll ask you to examine Exhibit 72 and state what it is?

A. It's a topographical map of the Sterba tract, Sterba lease. The elevations were determined by the County Engineer of Caddo County.

Q. Now, just explain to the Commission a little more in detail what that Exhibit purposes to show?

A. It is the topographic map, it is to show the topography, the surface of the ground, showing the drainage and the conditions on the surface of the earth.

[fol. 1147] Mr. Adams: We don't have any objections to control points, we can't admit the accuracy of the contouring, although it may be accurate.

Chairman Bond: You testified that it was reasonably accurate, did you make an investigation?

Witness:

A. Yes, I was there.

Chairman Bond: Objections overruled and received, exceptions allowed.

Mr. Williams continues with the witness:

Q. Mr. Montgomery, what use did you make of the information that was obtained and shown on Exhibit 72?

A. The tracing was made from this topography map, that was put on a film and reduced in size of 8 inches to the mile which was the scale used in Exhibits 54 to 57, inclusive, then by using the tracing cloth this film superimposed over the exhibits it was possible to determine by the matter of mere subtraction or addition where the—— would hit the depth of the sand at 6000 feet as well as the base of the sand reached at a depth of 6000 feet as the exhibits are based on comparable elevations. We made maps showing the sand thickness of all the Medrano sand, at a total depth of 6000 feet, as well as another map showing the same sand whose top was reached below a total depth of 6000 feet.

Q. Did you personally participate in the drafting of these maps of which you made reference of the diagrams?

A. Yes, sir.

[fol. 1148] Q. Do you have them with you, sir?

A. Yes.

Q. Mr. Montgomery, I hand you an instrument that the Reporter has marked, these instruments that have been marked Exhibits 73 to 76, inclusive, and ask you if these are the diagrams or maps you made reference to.

A. Yes, sir, other than to make a complete picture to follow through on the program that we start out to do, we made a tracing on the part of the Medrano field covering the Southwest of Section 36-6-10 from Exhibit 54-R, also No. 74 marked as a copy of the same portion of the field of Exhibit 55-R. The Exhibit marked 75 is a copy of that part of the field as shown on Exhibit 57-R, Exhibit No. 76

is an iso-baric map showing the thickness of the net Medrano oil sand below a depth of 6000 feet from the surface.

Q. Did you personally participate in or supervise the making of Exhibits 73-76?

A. Yes, sir.

Q. Have you an opinion as to the correctness of these exhibits insofar as the information they purport to show is concerned?

A. In my opinion they are correct, yes, sir.

Q. As I understood your testimony correctly, Exhibit No. 76 shows the thickness or the amount of the productive Medrano sand present under the Palmer-Sterba lease at a depth of below 6000 feet from the surface?

[fol. 1149] A. Yes, sir, that is correct.

Q. And I believe that the 6000 foot measurement to which you made reference was taken from the surface as shown on Exhibit 72?

A. Yes, that is correct, in conjunction with the use of the structure map.

Q. Is there any Medrano gas sand below a depth of 6000 feet?

A. No, sir.

Q. That is, on the Sterba lease?

A. There is none, no, sir.

Q. Is the only productive Medrano sand present under the Sterba lease below a depth of 6000 feet that is shown by Exhibit 76?

A. That is the intention of the map, yes, sir.

Q. Mr. Montgomery, did a representative of the Palmer Oil Corporation participate in any way in the study or in any way participate in the preparation of Exhibits 73-76?

A. Mr. J. P. McKee, of Wichita Kansas; Mr. Palmer's geologist was asked to participate in making the topography map and the preparation of other maps, and he was tied up on a well and after being unable to attend in making these topography maps, came to Oklahoma City and did go over the procedure in which the datum were used in Exhibit No. 76 was obtained, he agreed that the procedure and results from the data used was all right, but he did not agree that the datum from which this map was made as to its correctness.

Mr. Williams: We offer at this time Exhibits 73-76, incl.

[fol. 1150] Chairman Bond: Do you have any objections?

Mr. Adams: We have no objections, being understood that they are the interpretation of Mr. Montgomery as to the facts.

Chairman Bond: Received.

Cross examination

By Mr. Adams:

Q. Mr. Montgomery, which one of the revised map is it that shows the water level, the changing water level or the base of the sand.

A. The water level has never been changed.

Q. What about the base of the sand.

A. Because it's minus 5741 in each case, I believe——

Q. Take the base of the sand map.

A. 55-R.

Q. I wonder if you will put that on the blackboard, please, sir.

A. (Witness places map on Board being Exhibit 55-R)

Q. With respect to the additional information as when Palmer No. 7 well was drilled, did it entirely change the base of the sand from your previous calculations?

A. I would have to check the other map, I don't remember that detail.

Q. Will you do that.

A. (Witness checks map, being Exhibit No. 55-R) The base of the sand was found slightly higher, it was found roughly 20 feet higher in the No. 7 Sterba than was originally contoured which throws the contours further to the southwest which in turn made the oil-water contact move [fol. 1151] out to the southwest, the water-oil contact remaining minus 4741.

Q. Now that indicates, of course, that the base of the sand was somewhat higher than you previously calculated, then?

A. Yes, that is correct.

Q. Would you draw the contour lines on west and north, do you continue to raise them to some degree or do you run them on straight north and west?

A. I don't quite follow you, what do you mean?

Q. Well, will it raise the line, didn't it, *it* cause it to be further to the north and not so much to the west when you raise that line at the Palmer-Sterba No. 7.

A. That is correct. Due to the fact that the No. 6 Sterba was drilled into the Golmer immediately above the sand—gave a mere positive point and consequently you had to use that point in the contour.

Q. Now, did you keep notes when you were out at the well, at the Palmer-Sterba No. 7 well, did you keep notes on what you did there.

A. No, I didn't hardly think it was necessary.

Q. It's in practice isn't it, isn't it the usual practice to keep field notes?

A. It depends on how much there is to remember, how much I am suppose- to remember, but a thing like that there is hardly anything to keep notes on, no.

[fol. 1152] Q. It was rather important, Mr. Montgomery, wasn't it to keep notes on this well?

A. Yes, sir, but the information at the well was not conclusive and I am sure I could have remembered it until I got back to the office.

Q. Well, would you lose—at the well, wasn't it a fact that that was indicative of the porous zone?

A. It depends on where you lose circulation, a lot of wells lose circulation, but not on the bottom.

Q. I think that we are talking about producing horizons, that is what I had reference to.

A. You don't always lose it, no.

Q. Isn't that an indication that you just reduce—lose circulation on the well?

A. No, we drilled several wells down at Cement and to my knowledge we never lost the circulation. I told Mr. Palmer and it was a real producer and I know from experience in the Oklahoma City field that you can lose at the top of the sand, it is my fault that that was what should have happened and the samples were no good and that would determine it from the top of the sand and I told him that was my best guess and I was using the same conclusions and same reasoning, and it was a company well.

Q. That was a well at the point where the horizon began

to soften up and circulation was lost there, sand and as well as conglonerate.

A. Yes, there were sand samples where you find the [fol. 1153] conglonerate all through the field.

Q. And in your computation you are giving no credit for the approximate quality in which there were these sand clusters before the slight sand body was encountered, is that correct?

A. No, it's pretty much a personal opinion where the top of the sand is, Mr. McKee and I discussed it at length.

Q. And the first impression was that the sand was somewhat higher than now?

A. That is correct, but mainly because the circulation was lost.

Q. Yes, now in your corrective maps, Exhibits 54-57, inclusive, did they also correct the thickness of the sand with respect to the Phillips-Margaret lease?

A. It so happens that I didn't check it in detail because it wasn't part of our duties to see how they were effected differently and we ran planimeters or in any way try to calculate the changes that were made.

Q. Was the plain object—were you instructed by someone to merely make a construction or correction as to the Palmer lease?

A. That was the only well that pertained to the map and to be corrected and it ordinarily would influence other leases when these corrections were made.

Q. You say that the corrections were made insofar as they affected other leases?

A. Surely, because geology has no relationship to these lines.

[fol. 1154] Q. But you didn't attempt to make any study of how much difference it would make with respect to any other leases than the Palmer Sterba lease?

Mr. Williams: The engineers did that work.

Mr. Adams: He said he was being instructed from the Operator-Committee.

Mr. Adams continues with the witness:

Q. Now then, you did this to remove an inequity that previously existed, is that right?

A. No, we made the corrections in view of the facts, as we saw them.

Q. As developed by later drilling?

A. As developed by the drilling of No. 7 Sterba, yes.

Q. Now, as a member of the procurement geological committee, have you made any further studies as to the results obtained from the Stephens-Pell well, have you made any effort to make it a better well?

A. We shot the well once or twice.

Mr. Williams: We would like to object to the question for improper cross-examination.

Chairman Bond: Sustained. You may make him your own witness.

Mr. Adams: It's true that it doesn't relate to this particular thing and he has already testified about the other [fol. 1155] heretofore in a previous hearing, I thought that the Commission would like to hear all of the results.

Chairman Bond: The Commission would like to hear it, but it's improper cross-examination. He hasn't asked that this morning.

Mr. Adams: He hasn't this morning, but has previously.

Mr. Williams: Not as to later developments.

Mr. Adams continues with the witness:

Q. Mr. Montgomery, now these last exhibits that were offered, referring to Exhibit No. 76, will you explain to the Commission the dotted line as shown on that exhibit?

A. The dotted line as shown on Exhibit 76 is where the top would come at a total depth from the sand at 6000 feet and is put on there as an aid to the engineering committee in calculating sand volume.

Q. In other words, that, if I understand it, the dotted line is where the Medrano sand would be encountered at a depth of 6000 feet, at least a depth of 6000 feet.

A. At a depth of 6000 feet from the information we have.

Q. Did you prepare another map that shows merely the sand that is below the depth of 6000 feet?

A. Yes.

Q. Do you have that map?

A. Yes.

Q. I hand you Exhibit 77 and ask you to explain what that is.

[fol. 1156] Q. I hand you Exhibit 77 and ask you to explain what that is?

A. This Exhibit 77 shows a portion of the West Cement Medrano, covering the Southwest Quarter of Section 35-6N-10W,—shows where the top is encountered below 6000 feet from the surface,—the difference between this map and Exhibit 56 is that one of them shows all the sand below 6000 feet——

Q. Which one is that?

A. That's Exhibit 76. Exhibit 77 shows only that part of the Medrano sand whose top is encountered below 6000 feet.

Mr. Adams: We will offer in evidence Exhibit 77 as part of the Cross Examination of this witness.

Chairman Bond: Received.

Examination by Mr. Bond:

Q. Mr. Montgomery, will you refer to Exhibit 55-R, please, so that the Commission may see it on the blackboard and will you indicate on that Exhibit the direction in which the contour lines of the Sterba lease have been moved, if at all, to the original Exhibit 55?

A. The contour lines have been moved to the Southwest.

Q. About how far, in terms of feet?

A. Roughly about 600 feet.

Q. And has that caused the contour lines representing the water-oil contact to move in any direction?

A. It has moved to the Southwest, but not in the same proportion as it did right at the well, because you have a [fol. 1157] point that influences that contact, right here (indicating on plat) it's gradiotional.

Q. About how many feet to the Southwest has the water-oil contact line moved as to the Phillips-Margaret lease and the Palmer-Sterba lease?

A. Where the water-oil contact line crosses the North line of the Phillips-Margaret lease it has moved Southwest a distance of probably 200 to 250 feet.

Q. Did it cause the water-oil contact line to move in any

direction where it crosses the East line of the Phillips-Margaret lease?

A. By my method of measuring here I would say no.

Q. Now, state to the Commission how far Southwest of the water contact line do you consider the outside boundary of the field or of the pool?

A. This water-oil contact is on the base of the sand, at the top of the sand. That line would necessarily be farther off.

Q. All right, turn to your Exhibit 54-R and indicate to the Commission how far, if at all, the water contact line has been moved and in what direction.

A. Now, will you state that again?

Q. Turn to your Exhibit 54-R and indicate to the Commission how far, if at all, the water contact line has been moved and in what direction,—that is, at the point of the Margaret lease directly South of the Palmer-Sterba lease?

A. There is very little change, if any, made on the contour [fol. 1158] on the top, merely due to the fact that there was not a large difference or much correction made in Exhibit 54.

Q. Is Exhibit 54-R occasioned by the drilling of the No. 7 Sterba and if so, state how much higher the Medrano sand was found in the No. 7 Sterba than it appears to be on that contour map which is designated as Exhibit 54?

A. I would like to check the record or refer to the calculation, because we have been over this in this previous hearing,—I think I went over that myself.

Q. Well, you guessed at it then. The Sterba well wasn't there at that time?

A. I beg your pardon, it was, sir.

Q. I beg your pardon,—I didn't think we went into the matter.

A. Roughly, 15 to 16 feet.

Q. And that wasn't sufficient difference to change the water-oil contact line in your opinion and in the opinion of the committee?

A. As I said, my method of measuring isn't exactly correct. The Amerada No. 1 Little Chief, in the Northwest of 3 would give you a point and when you had only 15 or 16 feet correction as far away as the Sterba and by the time

you corrected it for that distance, roughly one-third of a mile, you would lose all your correction.

Q. Well, did you say you moved it in any direction?

A. If it had been moved in any direction, it would have been moved to the Southwest.

[fol. 1159] Q. Well, state whether it was moved or not, by your committee, if you know?

A. I don't recall the exact——

Q. Can you refer to your data and tell me that?

A. There wouldn't be any way other than to take a scale.

Q. Well, can you do that?

A. If I had a scale I could.

Q. Do you have a scale?

(Reporter's Note: Witness is handed a scale and after using same,—)

A. It is not discernible if it was moved.

Q. Then you say that map shows that it was not moved?

A. For all practical purposes it was not moved.

Q. Well, do you mean that due to the way your maps were made, due to the way that map was prepared it does not disclose that the line was moved?

A. That's correct.

Q. Now, the fact that the water contact line on the bottom of the sand was moved, does that indicate that there is a larger sand area at this time than you thought there was at the time you prepared Exhibits 54 to 56 inclusive?

A. Not necessarily, no.

Q. Well, do you say that it is the same sand area or a greater or a lesser?

A. Not,—do you mean——

Q. The correction made on the map indicates a decrease [fol. 1160] in the total sand volume,—I am not talking about volume, I am talking about area?

A. Well, I don't believe the question is answerable.

Q. Very well,—you say there was a decrease in the total sand volume?

A. That's right.

Q. And you are not able to tell the Commission whether there was an increase or a decrease in the area of the sand, the area of the top of the sand?

Mr. Williams: Don't answer that question,—I object to that on the ground of repitition.

By the Witness: I will have to ask you to draw me a diagram of what you are attempting to get at,—I don't understand you.

Q. You understand what the area of the top of the sand is, don't you?

A. Oh! You mean that if this was moved to the Southwest it would cover more area?

Q. I want to know whether that area has increased or decreased?

A. It has increased or decreased,—it hasn't increased or decreased as long as the line remains the same.

Q. Well, I asked you if that new map showed it increased or decreased in the area of the oil sand?

A. This No. 7 Sterba has a 17 or 16-foot correction where this line (indicating on plat) crosses the Phillips-Margaret lease and it would come down to a foot or two which not [fol. 1161] be discernible on a map of that scale.

Q. What about the bottom of the oil sand, has that area increased or decreased?

A. Well, if you want it, if you want to say that the, just the base of the sand, the outline of the pool,—due to the fact that the No. 7 Sterba was higher than originally thought it would increase, even though you decrease your sand thickness.

Examination by Mr. Adams:

Q. Mr. Murphey, you testified that your map area all prepared to show the sand body or thickness of sand, even though it contained cup oil or barrel oil,—going back to the fact that there is about thirteen feet in the top of this Palmer-Sterba well, which you haven't allocated to that well in thickness of sand, but in which there were clusters of sand and there was a loss of circulation, indicating a porous structure,—now, whether that thirteen feet would produce oil from the Conglomerate, or not, don't you think that thirteen feet should have been excluded in your sand thickness map?

A. Well, that is probably a matter of opinion, take the No. 2 Oaks well,—it so happens that I sat on the No. 2 Oaks

well and knew the conditions that existed in the top of that hole and the similarity between these two wells, even though they were some few clusters——

Q. Well, you didn't loose circulation in that well, did you?

A. No, we did not, but——

[fol. 1162] Q. Well wasn't there oil in this conglomerate in the No. 7 Sterba well?

A. I don't know, but the conglomerate in the No. 2 Oaks, my recollection is that in the No. 6 Sterba there was no oil.

Examination by Mr. Williams:

Q. Was there any different methods used in detecting the top in the sand in the Sterba 7 well than was used in the other wells?

A. Well, I wouldn't say that in all cases the top of the sand was figured from the identical procedure was used, but comparatively the same method was used in this well, was used in the tops and bottoms of all the other wells.

Q. Now, you say that the aerial—the top of the sand is shown by that corrected map?

A. No, I say the top of the sand may have been, there may have been a foot or two difference, but in a map of this scale you couldn't show that variation because it is too slight.

Q. That's correct?

A. Yes, sir.

Examination by Mr. Adams:

Q. You say "Maps of this scale",—did you draw the original map?

A. Yes, 8 inches to the mile was the scale.

[fols. 1163-1164] Q. There isn't any uniform way to determine the top of the sand, is there,—you do what seems to be the most important thing, you take what seems to be the most important known fact and use that, use your own judgment in determining the top of the sand,—isn't that true?

A. That's——

Examination by Mr. Williams:

Q. Do you have an opinion whether or not that twelve feet should have been or should not have been included in the Sterba well in the Medrano sand?

A. I have an opinion.

Q. What is your opinion?

A. If we thought it should have been in, we would have put it in. We left it out for the reason we didn't think it should be in.

Q. You say "we",—that means you and who?

A. Myself and the members of the Geological Committee.

Q. Well, try to narrow it down to your own personal judgment?

A. That was my own personal judgment, that it was not sand which should be included in the Medrano sand thickness map.

Mr. Williams: That's what I wanted to find out,—That's all.

[fol. 1165] Chairman Bond: Gentlemen, you may proceed.

Whereupon, Charles H. Danchertsen, of lawful age, being first duly sworn, testified as follows, to-wit:

Witness examined by Mr. Williams:

Q. State your name.

A. Charles H. Danchertsen.

Q. Where do you live?

A. Seminole, Oklahoma.

Q. With what company are you associated, if any.

A. Amerada Petroleum Corporation.

Q. In what capacity?

A. Petroleum Engineer.

Q. How long have you been associated with Amerada Petroleum Corporation in that capacity?

A. Approximately 10 years.

Q. State briefly your qualifications as a petroleum engineer and background in education and practical experience.

A. I graduated from the University of Minnesota with

a Petroleum of Engineering degree in 1936 and have been with Amerada Petroleum Company ever since.

Q. Are you familiar with the field known as the West Cement Medrano pool?

A. I am.

Q. Have you served on any committees in connection with the study pertaining to the unitization of that pool?

[fol. 1166] A. I have.

Q. What committee?

A. Engineering Committee.

Q. Mr. Danchertsen, have you been requested to make any calculations with respect to the per cent of participation as proposed in connection with the plan of unitization of that pool?

A. We have been asked to make calculations as to equities in regard to any changes caused by Sterba No. 7.

Q. You say "we"—who do you mean?

A. The engineering committee.

Q. Consisting of whom?

A. Audrey Goddold, as Chairman, and Gilbert Woods, and myself.

Q. What was done by you in connection with the recalculation to which you make reference?

A. Mr. Adams: I would like to object to the witness testifying in that respect unless it's shown who participated in making the original calculation.

Chairman Bond: Sustained.

Mr. Williams continues with the witness:

Q. Did you participate in making the original calculations?

A. I did.

Q. Now proceed with the answer to the question previously asked you.

A. We took the iso-baric map as drawn by the committee.

Q. Now right there, Mr. Witness, is that the map you [fol. 1167] referred to, one of the exhibits in this case and if so what is the number of it?

A. It is one of the isopacious maps that we used, was prepared by the geological committee and its number is Exhibit No. 57-R.

Q. Now then, the map to which you make reference is Exhibit 57-R in this proceeding?

A. That is correct.

Q. Now proceed from there as to what you did.

A. We took the isopac map in the areas where any change was made by the drilling of Sterba No. 7 to arrive at the oil in place for these tracts.

Q. Now, you say that you planimetered these areas?

A. We took an instrument that you integrate a map to find out the areas to which you are working with.

Q. Is that a mechanical operation?

A. It's a mechanical operation.

Q. Now, what did you do in that operation?

A. We arrived at these figures and to do that we calculated the volume of the sand thicknesses under these tracts to obtain the oil in place which was used in the equities, used in the formula to arrive at the equity.

Q. Then, what next did you do?

A. After arriving at these figures, we set them up so as to determine the equity of each and every tract within the pool.

[fol. 1168] Q. Was there anything else you found before you determined the equities?

A. These equities are determined or final equity table.

Q. Is there any change made in connection with the Palmer-Sterba lease?

A. Some change was made as to the original map.

Q. What change in that respect?

A. There was a lesser volume attributed to that lease that we previously arrived at.

Q. I notice in the table of equities as we submitted that the Sterba lease is divided in two tracts Nos. 1, attributed to Gulf and one to Palmer, is there any recalculation made as to these two leases?

A. No, on that particular lease the calculation was made to the volume or oil in place found above 6000 feet from the sand and that down below 6000 feet from the sand.

Q. Did you make the calculation as to that slight change, as to the change of volume above and below the 6000 feet?

A. We did.

Q. How did you do that, sir?

A. We took the map that the geological committee had drawn, showing the 6000 feet dividing line or plane and calculated it from that map.

Q. Is that a mechanical operation?

[fol. 1169] A. Yes, sir, from the use of a planimeter.

Q. What did you do with the results of that calculation?

A. It was incorporated into the figures we obtained from all other leases to obtain the equities and the equity was shown as above 6000 feet and below 6000 feet.

Q. Now is there any change in any other factor that went into any other calculation?

A. There was one other change in the current income factor, there was that cut income as given to Sterba No. 7, that being the only change, the 6000 plane does not pass through the gas in the oil zone.

Q. Was there any change made with respect to the gas on the Sterba lease?

A. Due to the drilling of Sterba No. 7?

Q. Yes, or as a result of your recalculation that you made reference to.

A. To the best of my knowledge there was very little change made in the gas as I remember, there was a little bit, but very little due to the change in the sand thickness.

Q. Were these revised figures to which you have testified used in any way in connection with the figures heretofore introduced in this hearing as Exhibit No. 53?

A. The reference made to the re-working of the map of Sterba No. 7 were entered on the table shown on Exhibit 53 and I have tables showing these corrections that are [fol. 1170] the same as these exhibits, except for the few changes.

Q. Handing you the tables that you previously handed me, Mr. Witness, and that are now marked as Exhibit 53-R, I will ask you to state what they are.

A. These tables show the corrections made by the drilling of Sterba No. 7 on Table No. 1 it shows the equity and has several tabulations that finally came out with recoverable oil in barrels and recoverable gas in cubic feet and the percentage of total of each lease in the pool.

Q. Now, wherein in that column is any change made in respect to any particular lease.

A. There were changes made in this table and Column 1 is to the equities on several leases in which the sand thickness was changed.

Q. And these are the figures arrived at with the planimetering of the sand thickness?

A. That is true and these changes acreage fee of course will reflect all through each table as individual leases.

Q. In comparison with Exhibit 53 and Exhibit 53-R will show in respect to the changes that were made?

A. That is true.

Q. What other column in that table would you find a correction as to your base information?

A. I don't understand your question.

[fol. 1171] Q. What is the change as respect to the income?

A. That is shown on Table 4 as Exhibit 53-R which shows under the Sterba lease additional income due to the drilling of Sterba No. 7.

Q. Now, in that exhibit No. 53-R, where will we find the recalculation with respect to the split to the acre-foot of sand under the Sterba lease as between the Palmer Corporation and Gulf Oil Corporation?

A. The split in the Sterba lease with respect to acre-feet shows up on Table 1 which sets forth that attributed to Gulf Oil Corporation below 6000 feet and that of Palmer Oil Corporation above 6000 feet.

Q. Except for the changes concerning which you have testified, are there any other changes made in these tables introduced as Exhibit 53-R, as compared to Exhibit 53?

A. The only other change will be in Table 2, which is a final equity, it's table 2 of Exhibit 53-R which was arrived at from these other two tables.

Q. Arthmetic change?

A. That is all.

Q. Now, using the changed information concerning which you have testified, you then by arithmetic process recalculated the equity, is that what you mean to say?

A. That is correct.

Q. Now, Mr. Danchertsen, I hand you an instrument marked Exhibit 78 and ask you to state what that is, if you can.

[fol. 1172] A. This exhibit sets for the interest in the unit for the individual leases.

Q. Based on what calculation?

A. Based on the calculation in Exhibit 53-R.

Q. Do you have anything to do, or did you personally participate in the making of calculations from which Exhibit 78 was prepared?

A. I did.

[fol. 1173] Q. Do you have an opinion in respect to the correctness of the system used in arriving at the proportions that formed in Exhibit 78?

A. They are correct.

Q. At the time that you and your committee planimetered the sand thickness on these tracts to determine the sand thickness in respect to these tracts, was a representative of the Gulf Oil Corporation present?

A. There was.

Q. And who was that representative?

A. Mr. Godbold, as Chairman of the Committee.

Q. Was there a representative of the Palmer Oil Corporation present?

A. There was, Mr. Bradley,—state that question again.

Q. Was there a representative of the Palmer Oil Corporation present?

A. There was a representative of Henry Keplinger, who was representative of the Palmer Oil Corporation, whose name was Mr. Bradley.

Q. When was he present?

A. He was present when the Palmer lease was being planimetered, with respect to the 6000 foot——

Q. Did he take any part in that operation?

A. He was invited to take part in it, and although he did some of the actual planimetering, he seemed to be satisfied with the result obtained.

[fol. 1174] Mr. Adams: Just a minute,—we move to strike out of the latter part of that answer, that he satisfied.

Chairman Bond: Sustained.

Mr. Williams: No objections to striking that.

Mr. Williams: At this time we offer Exhibit 53-R and Exhibit 78.

Chairman Bond: Received.

Reford Bond Jr.: Just a minute. we object to it, object to them, for the reason that they are not properly identified and for the further reason that there is an instance of and inference based on another inference.

Chairman Bond: Overruled.

Reford Bond Jr.: Exception.

Chairman Bond: Exception allowed. Ill show——

Examination by Mr. Adams:

Q. Mr. Danchertsen, the Engineering Committee on which you served and to which you have referred is a committee composed of representatives of proponents of the compulsory Unitization Plan here offered,—that's the committee to which you refer, isn't it?

A. That committee was appointed by the Operating Committee of whom the Operators in the field were given an opportunity to be a member or send a representative.

[fol. 1175] Q. It consists of proponents of the Plan, doesn't it?

A. It does usually and it happens that in this case, it does.

Q. And when you say you were permitted to make this or that or some other computation that permission came from whom?

A. The Operating Committee.

Q. If it came from the proponents of the Plan, didn't it?

A. Every Operator in that pool was given a chance to be on the Operating Committee.

Q. Well, when you speak of the Operating Committee that is the committee that is presenting the Plan of Unitization here, isn't it?

A. I believe it is.

Q. Now, you made this computation, but did you also make a computation or attempt to determine the equities as you viewed them, assuming that the Palmer Oil Corporation is entitled to all of the Medrano sand which may be encountered to a depth of 6000 feet?

A. We have only those I have referred to.

Q. And those were on the theory presented by Gulf,—isn't that correct?

A. I don't know what the Gulf Company advanced,—I don't know.

Q. The instructions to which you referred, again, I presume came from your so-called Operator's Committee?

A. That is true.

Q. Now, in making these calculations to which you re- [fol. 1176] ferred, I assume that you used the same method in respect to other leases in the pool or what you have determined hereto be the pool?

A. If I understand your question right,—do you refer to the planimetering——

Q. Well, I'll call your attention that you used, as set forth in Exhibit 53 and also in 53-R, that you used a uniform plan in making these calculations in respect to which leases contributed and how much they contributed to this Unit?

A. The same formula was used.

Q. That's what I mean,—who told you what formula to follow in making these calculations?

A. The Operating Committee formulated it.

Q. And what you did then was merely a matter of mathematics.

A. That's true.

Q. You wouldn't have had a, to be a petroleum engineer to do that, would you?

A. I suppose not, a lawyer or anybody else.

Q. Anybody who understood mathematics, could have made those calculations?

A. That's true.

Q. Now, did the Operator's Committee tell you every detail to follow in making this computation?

A. They asked us to make this computation, and we made the computation.

Q. Well, I don't believe you answered my question, did the Operator's Committee tell you every detail to follow [fol. 1177] in making the computation?

A. I believe,—I believe I told you that they formulated the Plan and we carried out the calculations.

Q. Like they told you to.

A. Well, as I have said before——

Q. That's what I mean,—they supervised every detail of the formula and all you did was make the calculation, following that formula?

A. That's true.

Q. Now, in doing that, you didn't use any of your own knowledge or ingenuity as a Petroleum Engineer in arriving at the result obtained, did you?

A. Well,——

Q. That was just your arithmetic,—isn't that right?

A. I don't know what you are trying to get at.

Q. Well, you have been presented here as a Petroleum Engineer and I am sure that you are, but in this matter it didn't make any difference whether you were a Petroleum Engineer or anything else, so long as you were able to add two and two and make it come out right, isn't that true?

A. It could be.

Q. Now, that calculation,—you took the data that was submitted to you as set forth in Exhibit 57, the oil thickness map,——

A. 57-R, the oil thickness map, the thickness map of the oil sand West Medrano Cement Pool.

[fol. 1178] Q. In making your computation, was that the only instrument or Exhibit that you used in an effort to determine the acre feet of oil or gas in that area?

A. No, there was another Isopachous Map of the gas area.

Q. That's Exhibit 56, I believe, I don't believe it is on the board,—is that Exhibit 56?

A. Yes, Exhibit 56-R.

Q. Well, when you made the original computation you used Exhibit 56, and when you made the other computation you used Exhibit 56-R?

A. That's true.

Q. Now, in Exhibit 57-R, when that was prepared by the so-called Geological Committee that changed the area slightly by covering up the gas zone, didn't it?

A. There was a very small change in the two maps,—56-R, I believe, cut down, due to the lesser sand thickness in that area.

Q. Lesser oil sand thickness, thereby increasing the gas sand thickness?

A. If you take lesser thickness of sand I don't know how it is going to increase it.

Q. Did you give the Palmer-Sterba No. 7,—how much lesser sand thickness?

A. The Palmer-Sterba No. 7 is wholly in the oil zone,—that well has a lower sand thickness than you have it, that will change it some.

[fol. 1179] Q. And how much change?

A. Very little.

Q. Do you know to what extent?

A. Well, if I can get a lot of old tables——

Q. Well, whatever the extent was, did it change it slightly?

A. Well, it would appear from the tables, yes. They would be shown opposite each next number.

Q. Now, what you have set forth in that Exhibit 78 is as the equities compilation which you now conclude should be assigned to each of the leases that may go into the proposed Unit?

A. That's true.

Q. You are appearing here, are you not, as a representatives of the proponents of the Plan?

Mr. Williams: What was the question.

Mr. Adams: The question was are you not appearing here as a representative of the proponents of this Plan?

Mr. Williams: I think the record speaks for itself,—he is called as a witness to testify to certain acts that he did for the proponents.

Chairman Bond: He may answer.

A. I was called to testify, as a member of the Engineering Committee, who worked out this equity, these equity figures.

Q. Well, are you of the opinion that the Commission should consider Exhibit 78 rather than the equity attribu-[fol. 1180] tions which are set forth in Exhibit 1, offered in this hearing.

Mr. Williams: To which we would like to object as being improper cross examination.

Chairman Bond: Sustained.

Q. You made the calculations, I believe you testified, that went into Exhibit 1, didn't you, and you used the same formula in reaching those conclusions?

A. I don't believe I remember exactly what Exhibit 1 was.

Reporter's Note: At this point Mr. Adams answered the Witness, "Exhibit 1".

A. As I remember, as a member of the Engineering Committee, I held this.

Q. And what you are now proposing is Exhibit 18 and you changed the table of equities which you received, which you heretofore prepared, or which you have referred to as Exhibit 1, isn't that true?

Mr. Williams: Objected to as improper cross examination, he said that——

Chairman Bond: Sustained.

Mr. Adams: Note our Exceptions.

Chairman Bond: Exception allowed.

Q. You were on the Committee that prepared what has been referred to here as the Engineering Report?

A. I was on the committee appointed by the Operating Committee and assisted——

Q. And assisted in the preparation of that report?

[fol. 1181] A. And assisted in the preparation of that report, yes.

Q. And in making the calculations as to the acre feet of either oil sand or gas sand in the Medrano section, that is shown in Exhibit 53 and 54, you didn't attempt to determine what part of those, what number of those acre feet of oil sand or gas sand were actually productive of oil or gas, did you?

Mr. Williams: That's improper cross examination,—the witness testified that he simply took the geological map and——

Chairman Bond: Overruled.

A. I took the map and, the map as supplied by the geological committee and calculated the acre feet of both oil and gas sand and calculated it, purely a mathematical calculation.

Q. And no consideration was given as to whether or not each one of these acre feet or any of them would produce oil or gas in commercial quantities?

Mr. Williams: We object to that question.

Chairman Bond: Proceed, gentlemen, sustained.

Mr. Adams: If the Commission sustained the objection?

Chairman Bond: Yes.

Mr. Adams: Note our Exceptions.

Q. Then, with reference to making the calculations as set forth in Exhibit 53-R, did you take any consideration of in-determining the sand acre feet in the oil zone or the sand [fol. 1182] acre feet in the gas zone any limit other than that shown by Exhibit 57-R?

A. We took the map as the Geological Committee presented it to us.

Q. You didn't take into consideration porosity, is that correct?

A. Porosity was taken into consideration.

Q. Where is that shown on Exhibit 57-R, if it is so shown?

A. Exhibit 57-R as I recall it is part of the tables that were contained in the Engineering report.

Q. No, it is the map on the board?

A. Oh, no, porosity doesn't show on that.

Q. As a matter of fact, the committee told you what porosity figure to use in each segment in making your calculations, did they not?

A. The porosity figure is used in each segment, and as it is used in each segment it is obtained from the Core Analysis.

Q. Did you check the Core Analyses?

Mr. Williams: We object to that as improper cross examination.

Chairman Bond: The Commission remembers this witness didn't testify as to any Cores.

Mr. Adams: If the Commission please, the purpose of my question is this,—the witness has there a computation of the equations and I wish to show how he arrived at those.

Chairman Bond: You held him down to mere mathe- [fol. 1183] matical compilations and you have confined his testimony to common aritfmetic, mere mathematical testimony. You may put on the Engineers and the Commission will be happy to hear all the Engineers you may bring here

but they offered this witness as a mathematical,—as a mathematician and limited his testimony to mathematical compilations.

Mr. Williams: If the Court please, Engineers have been on in this hearing before and we came here with this witness solely as——

Chairman Bond: Gentlemen, proceed.

Mr. Adams: Well, I don't want to be offensive but we are——

Chairman Bond: You are not being offensive,—we are trying this case according to law and evidence and when we come into Court you must abide by the rules, the law and the evidence,—you may put on all the witnesses you want to and the Commission will be happy to listen to them if it takes until next Spring.

Reford Bond Jr.: I would like to ask the witness a few questions.

Chairman Bond: Very well, then.

Examination by Reford Bond Jr.:

Q. Mr. Danchersten, are you a member of the only En-[fol. 1184] gineering Committee that operated in connection with this formulating plan or were there other committees?

A. As far as I know, there was only the one Engineering Committee.

Q. Then there was also a Geological Committee, was there not?

A. That's true.

Q. Then there was an Operator's Committee, was there not?

A. Yes sir, that's true.

Q. Now, that's three committees?

A. Well, there were many committees.

Q. Can you name the other committees?

A. There was——

Mr. Williams: Wait a minute, we object to that as improper cross examination.

Chairman Bond: He may show where he got his information.

Mr. Williams: I'll withdraw my objection.

A. Well, there was a Legal Committee,—well, I guess that's about the only definite additional one that I can put my fingers on.

Q. Those are the only committees that you can now name that had anything to do with the formulation of this Plan, isn't that correct?

A. Yes, all that I definitely know about.

[fol. 1185] Reford Bond, Jr. examines the witness:

Q. Now, as a member of the Engineering Committee, did you devise and work out the formula that was used in determining the equities of the parties entitled to the oil and gas in these reserves.

Mr. Williams: I object to that as it has no bearing on the arithmetic here.

Chairman Bond: Make him your own witness.

Reford Bond, Jr.: All right, I will make him my own witness; you are my own witness now, answer it.

A. As an engineer, did I work it out?

Q. Did your committee?

A. We were instructed by an operating committee on what to do, we were given a formula and we worked it out.

Q. I understand you to say that you were furnished a formula that you used by the operators' committee, is that correct?

A. Yes.

Q. And your committee did not devise the formula used, is that correct?

A. No, we did not devise the formula.

Q. Was the operators' committee composed of engineers?

A. I would say practically all of them were engineers.

Q. The function of your committee then, was mathematically only?

A. That is true.

[fol. 1186] Q. You exercised none of the completion and knowledge of the qualified petroleum engineer in your work?

A. As a committee we were instructed to calculate these equities as we have done.

Q. Did *you* committee invite representatives from all

of the leases owners and operators in that pool to attend your meetings or was that done by someone else?

A. The operators' committee extended all operators an invitation to attend the meetings.

Q. And your committee extended no invitation whatever?

A. As to what?

Q. As to attendance, representatives attending your meetings?

A. All operators had an invitation to these meetings.

Q. Did your committee extend that invitation or was that extended by another committee?

A. Our committee was appointed by the operators' committee and every operator had an opportunity to be on it.

Q. But, your committee extended no invitations by its own volition or use of the operators' committee.

A. Anyone that wanted to come in and see what we were doing, if they were interested enough, they could come in, it was open for all of them.

Q. As I understand it you say now that you operated so that they could come in and see what you were doing, that [fol. 1187] isn't what I asked. Did you invite them in?

A. Invited them to see what we were doing or be a member of the committee?

Q. No, to attend your meetings.

A. We invited them several times, do you mean individuals to come in, most of the time——

Q. Were they representatives of operators in the pool?

A. Yes.

Q. And when you gave gave out the invitations, did you invite representatives of all the operators who were not represented immediately on the committee?

A. I don't think that's necessary that anyone be invited, everyone was invited when they called for all the operators.

Q. I asked if you invited them all or invited only part of the ones that you wanted.

Chairman Bond: Counsel isn't asking you what you think, but what you did.

Witness:

A. We invited the representatives of the operators to come and work jointly with us at one time.

Reford Bond, Jr. continues with the witness:

Q. I understand that, and did you invite the representatives of all other operators in on that committee?

A. All others there were notified except one, I think that is who you have reference to, all except one was satisfied [fol. 1188] with what the committee was doing.

Q. That still isn't what I asked you.

Mr. Williams: Did you or didn't you?

Witness:

A. No, we didn't.

Reford Bond, Jr. continues with witness:

Q. You didn't. Now, how many meetings did you hold with which your particular committee invited representatives of all persons who are operating in the pool.

Mr. Williams: I think that he has just given that and testified that his committee didn't extend invitations to all operators, it was a very positive "no"

Reford Bond, Jr. continues with the witness:

Q. Now, state what meeting that you invited any operators that attended the meetings.

A. We invited one operator to have a representative present when calculations were made on the Sterba lease.

Q. Did you ever at any other time invite anyone to attend your meetings?

A. Not to my knowledge.

Q. Now, when you made that invitation, was it made at the direction of the operators' committee?

A. Yes.

Q. And you wouldn't have extended the invitation if the operators committee hadn't required you to do so, is that correct?

[fol. 1189] A. I don't believe it was up to the engineering committee to extend it.

Chairman Bond: We have told you time and again, we don't want what you believe, but tell what you did.

Mr. Williams: Say yes or no.

Witness:

A. We didn't extend any other invitations.

Reford Bond, Jr. continues with the witness:

Q. It is a fact that it was not the duty or the purpose of your committee to extend any invitations at all, if any were extended that was by the committee of operators?

A. That is correct.

Q. That is all.

Mr. Adams examines the witness:

Q. If there are any other facts that developed from the actual drilling in this area here involved, which would require a recomputation of the equities in this proposed plan, do you feel, as a member of the engineering committee, that you referred to, that you could make such a recomputation unless directed by such operators' committee?

Mr. Williams: I object to that.

Chairman Bond: Overruled. He said that he was directed by that committee, now let's see if he will stick to his same story throughout.

Witness:

A. I was instructed to do so by the operators' committee, I mean, if I were instructed, I would do it.

[fol. 1190] Mr. Adams continues with the witness:

Q. Otherwise you would not do it?

A. No.

Q. That is all.

Witness excused.

Mr. Williams: I would at this time like to tender Mr. Kaveler for further cross-examination to counsel across the table.

Reford Bond, Jr.: That is very agreeable to us.

Chairman Bond: Mr. Kaveler, will you please take the stand.

[fol. 1191] Whereupon, HERMAN KAVELER was recalled to the stand for further cross-examination.

Reford Bond, Jr. examines the witness:

Q. To pursue the questions of Mr. Danchertsen, which you heard, you are a member of the operators' committee?

A. Yes, sir.

Q. You are chairman of the committee?

A. Yes, sir.

Q. Now you recall that *their* has been a recent order made by the Corporation Commission effecting the production of gas from the West Cement Medrano Pool?

A. Yes, sir.

Q. I will ask you to state whether or not that order and the operation of the pool under the order would cause you to change your testimony with respect to the time required to produce the gas which is now in the reservoir and the ratio of evaluation of the reservoir in the gas area and oil area as compared one to another in a time ratio.

A. To an extent, yes, sir.

Q. You tell the Commission to what extent.

A. As I understood counsel, Mr. Commissioners, previous to the order of the Commission, some 23 million cubic feet of gas per day were being produced from the Medrano sand. The Commission reduced the withdrawal around four million cubic feet per day. I will have to check to [fol. 1192] see if that is correct, so under the order the field is now allowed the gas production approximately 20 per cent of what it was. The step of the Commission was a step for conservation in the field to reduce the amount per day and the consequence of that order, if continued through the life of the field, the period of time for withdrawal of gas will be accordingly extended.

Q. How long do you think that it will be required now to produce the gas under the present order of the Commission?

A. That answer can be easily obtained, Mr. Bond, if I recall, that the gas reservoirs that I previously testified to, I believe if I am correct that was an estimated 44 billion standard cubic feet of gas reserve. I will have to refresh my memory—so, 44 billion cubic feet at 84 billion a day will be about 11,000 days and about 30 years at the present rate, if that arithmetic is correct. I'd better take a pencil and check it. (Witness checks his figures) I think 30 years is correct.

Q. Now, state to the Commission the ratio voiding the gas area and voiding the oil area at the time under the present gas allowable.

A. Well, it's hard to follow your question, Mr. Bond, I—

Q. I believe you gave those figures one time before the order was made on the basis of 23 million cubic feet a day and I would like to have the same ratio at the present rate of production.

A. Did I testify that it would take 12 years to produce the oil?

[fol. 1193] Q. I understood your testimony to be that the gas area evacuated in a certain number of cubic feet per day or per year and the oil per year or per day, and it shows an over-balance in the area.

A. As a ready estimate, that is probably true; now, the voidage of the gas area is probably equal to the voidage of the oil area.

Q. I believe that you testified that it would be possible to drill wells in the oil zone area on ten acre spacing, is that correct?

A. No, I don't think that I testified to that.

Q. Perhaps it was 20 acre spacing.

A. My testimony in respect to drilling was testimony in respect to without unitization and after unitization the testimony was with the pool unitized. The oil will be drilled in the lowest possible structural point and only in respect to a well, a well for oil recovery and for that extent and the unitization was to permit the most efficient production of oil and very substantially increase the recovery of oil.

Q. Yes, and you also testified, Mr. Kaveler, that in the

event a well was drilled to each 20 acre unit in the oil zone, that according to the amount of oil in the reservoir and you could expect a reasonable return for the operators under the spacing and present methods of operation.

A. I didn't testify to that.

Q. That is a fact, isn't it?

[fol. 1194] A. No.

Q. How many barrels of oil are under each 20 acre tract in the average?

A. It depends on the location.

Q. I said the average.

A. There will have to be some arithmetic made to get that answer, I previously testified that there were 96 million barrels of oil in the pool and that the production to a recent state was about 8 million barrels and that would leave about 88 million barrels of oil in the pool, and you desire to have the answer on the average; the pool has a total average of about 2800 acres, if I remember the number correctly.

Q. Let's confine it to the oil bearing sand.

A. You wish it on the average of the oil bearing sand?

Q. Yes.

A. That is approximately 1200 acres in the oil bearing area so the average amount of oil left in place at the present time is 88 million divided by 1200, it's about 7300 barrels per acre on the average.

Q. How much of that is *producable* under present methods?

A. It depends on the orders of the Commission in the future, about 20 or 25 per cent.

Q. Presuming that the present order will be maintained.

A. 22½ per cent times that, about 1600 barrels to the acre if my arithmetic is correct.

[fol. 1195] Q. And, at the present time, the price of oil is how much per barrel?

A. Right now, I would say about $2.00 for convenience.

Q. Then how much will that be to the acre that you expect to produce?

A. $32,000 to 8/8.

Q. And for 20 acre spacing you will have then, $640,000?

A. It's high like everything else, but that is the way it's coming out now.

Q. Do you think that you could drill one well to 20 acres?
A. One may or may not.
Q. Could you two to 10?
A. You could probably even nine.
Q. In this field, I believe you testified, has been substantially developed on 40 acre spacing basis.
A. Yes.
Q. And that was instituted at least that method of drilling was instituted on order of the PAW during the war?
A. Yes, sir.
Q. Now, that order was rescinded in October, 1945?
A. It was rescinded.
Q. And since that time and before the filing of this case before the Commission by Mr. Palmer of the Palmer Company, an application for the 20 acre spacing, the spacing [fol. 1196] in this area was under a general order of the Commission as to the oil zone which required spacing of 600 feet apart and 300 feet from the property line?
A. That is correct.
Q. And so if this field has been developed to the extent as permitted by the law, one well could have been drilled to the ten acres in the oil zone.
A. Generally, that is true.
Q. Then, it is a fact that none of the operators or applicants in this case have done that to that extent?
A. No, not 1 to 10 acres.
Q. Not the oil areas to that extent?
A. I think that is right.
Q. The fact of the matter is, that it hasn't been developed to the extent of 1 well to the 20.
A. That is correct.
Q. That is all.

Mr. Adams examines the witness in further cross examination:

Q. Mr. Kaveler, you have had the recomputation made as set forth in exhibit, which has been offered as Exhibit 78.
A. I don't know what you mean by "you."
Q. As chairman of the so-called operator's committee.
A. If you mean "you" by the operator's committee, I

will say yes. I will decline to answer any question that has a personal element in it.

[fol. 1197] Q. You heard the preceding witness. You heard him testify as a member of the so-called engineering committee that they merely did mechanical things as directed by the so-called operator's committee?

A. I understand with respect to the revision in Table or Exhibit 78, that in respect to that table, he did do as the operator's committee directed.

Q. Did you hear him also testify that Exhibit 53, or the factors, were specified, as an engineer he merely made a computation.

A. In the equity computation, he did so testify.

Q. Now, you saw fit as chairman of the so-called operator's committee, when the Palmer-Sterba No. 7 well was drilled, and it showed in some substantial difference in the oil bearing sand in that particular locality to direct a recomputation of the equity should be attributed to the various leases that you proposed to put in this unit.

A. The answer *it* yes. I would like to say that the counsel has used the term "substantial change," in my opinion the drilling of Sterba No. 7 well brought about no substantial change in the equity of the picture in the pool.

[fol. 1198] Q. Referring to Exhibit 73, which is the Minutes of the Meeting of April 10, 1947, of the various Operators and interested parties in the area here under consideration, do you recall that the purpose of that meeting was to discuss the inequities caused by the attribution of the Gulf and Stephens leases?

A. I don't know, Mr. Counsel, that the meeting was called because of any alarm or feelings on the part of the Operators that there was any gross inequity in the assignment to the various leases. The meeting was called whereby the Operators could sit down and discuss and determine whether or not on the face of the conditions in the various areas there was any real basis for changing the equities in the Plan as submitted and I recall that as a result of a meeting in the Biltmore Hotel wherein Mr. Palmer and Adams were present and took a prominent part, it was stated by Mr. Palmer and Mr. Adams that the equity was favorable and that the meeting should proceed.

Q. That is your memory, is it?

A. That's my distinct recollection.

Q. Have you read those minutes recently?

A. I haven't read them recently, but in spite of what they say that is what occurred. And if you have them I would be glad to read them.

Q. Well, they are here,—as a result of that meeting Mr. Stephens was going to recondition the Pell well, of the Stephens Petroleum Company, weren't they?

A. I don't remember but I know for many years that [fol. 1199] Stephen's intended to recondition that well.

Q. Well, when was that well drilled?

A. I'll possibly change my statement there,—I was in error about "many years".

Q. When was that?

A. It was in October, '46 when this hearing begun.

Q. They didn't get around to it until they had this meeting in April, 1946, did they?

A. That's correct, I think.

Q. And after that Operator's meeting they did start in to see whether it was best to convert it into a deeper well, didn't they?

A. I think that's correct.

Q. And they have been working on it ever since, haven't they?

A. Yes.

Q. With no definite results?

A. You'll have to talk to Mr. R. M. Stephens,—when I last talked to him he expected very definite results.

Q. Well, do you know the facts?

A. Well,——

Q. You don't think them of sufficient importance to have a recalculation of the equities, do you?

A. Well, I don't know what you mean.

Q. Well, the sort of poor well that the Stephens-Pell well was——

[fol. 1200] A. I don't think the results show that the Pell was a poor well, I think it was fair and equitable as——

Q. What did Mr. Stephens tell you that well would produce, Mr. Kaveler?

Mr. Williams: We object to that as hearsay as to what it would produce.

Chairman Bond: Sustained.

Mr. Adams: We would like for proponents to present the results of the retesting of this Stephens-Pell well because of the inference from Mr. Kaveler's testimony, which I am sure is all hearsay,—that's all.

Examination by Mr. Reford Bond, Jr.:

Q. Mr. Kaveler, from all the Operator's Committees findings and the data you have, you would have no objection in the event this pool unitization would grant Tracts 1 and 2, would you?

A. Well, I don't know whether it is within my province to make that statement,—I think the Commission would have to make up their minds about that.

Q. Well, you don't consider them essential to Unitization of that pool, do you?

A. Well, I don't distinctly recall where those tracts are.

Q. By the Stephens-Odele-Table, Dome-Bo——

A. Well, those tracts lie within the common source of [fol. 1201] supply, those leases have recoverable oil beneath them and I think because of the fact that there is recoverable oil beneath them, and they are part of the common source of supply, my recommendation is that they be included in the Unit.

Q. Well, they would affect the Unitization, would they?

A. Well, I don't know whether they would or not.

Q. How about tracts 69 and 70?

A. Yes, I think so, the same answer in respect to those, and 67 and all other tracts on which there is no production.

Q. And which are outer edge tracts?

A. I think that they,—the same circumstances would apply to those, yes sir.

Examination by Mr. Williams:

Q. Those tracts are all part of the common source of supply?

A. Those tracts are, yes.

Q. Those tracts, I believe *you* testimony is, have recoverable oil under them?

A. They have.

Reporter's Note: At this point a short recess is had, after which the Commission is again in session, the same witnesses on the stand and the hearing is resumed as follows:

Examination by Mr. Adams:

Q. Mr. Kayeler, you were very positive in your statements that those tracts which Mr. Bond asked you about [fol. 1202] were within what you call the common source of supply and had recoverable oil under them,—I presume you mean in commercial quantities?

A. Through Unitization operations, yes sir.

Q. But they wouldn't be commercial under other circumstances, if they were not under Unitized operations?

A. Well, that's a question I haven't studied in detail.

Q. You know there is a dry hole on one of those tracts?

A. Well, I don't know.

Q. One of those tracts down in the Southeast corner of the pool, to which Mr. Bond referred is a 40-acre tract on which there is also a dry-hole, isn't that right?

A. I don't think so, Mr. Adams.

Q. Look at that map there?

A. I have looked at it.

Q. You see this line here, you see that (indicating) you say that is wrong?

A. I say it is.

Q. Then you state in this respect and however positive you can be, you are only presenting your opinion?

A. With equal positiveness.

Q. That's all,—Oh, just a moment,—now, you are proposing and supporting another attempt before this commission to unitize another oil common source of supply, at this time, are you not?

A. As a Conservation Measure.

[fol. 1203] Well, I'll let the Commission decide that.

A. Well, I'll tell you,—the Phillips Petroleum Company is one of some thirty Operators proposing the Unitize the West Edmond pool. For the same reason we are propos-

ing to Unitize the West Cement Medrano pool, I will add.

Counsel for Protestant: We have asked that the voluntary statement of the witness be stricken.

Chairman Bond: Sustained.

Q. Now, in the West Edmond area you were very careful in the case of unproductive tracts——

Mr. Williams: Wait a minute,—we object to that as incompetent, irrelevant and immaterial, improper cross examination, the West Edmond Field.

Chairman Bond: Yes, sustained.

Examination by Mr. Williams:

Q. Mr. Kaveler, you were asked certain questions with respect to the recent gas order of this Commission upon the division of equity as herein recommended, what is your opinion in that regard?

A. The recent order of the Commission in respect to production of gas from gas wells in the Medrano common source of supply has had no effect upon the equities assigned to the various tracts, nor should it have any effect upon the equities assigned to the various tracts, for the reason [fol. 1204] that the basis for equity attribution . . . the attribution of equities to the tracts in the proposed plan is based upon recoverable oil in place and gas in place under the proposed tracts. The orders of the Commission would have no effect upon the attribution of equity to the various tracts.

[fol. 1205] Mr. Williams examines the witness:

Q. Mr. Kaveler, are you familiar with the engineer basis entered into the recalculation of the per cent of interest to the unit as reflected by Exhibit 78?

A. I am, for the reason that Exhibit 78 representing a revision of the equities involved, the same computations, the same basis of engineering procedure, which original Exhibit B1 was based upon the procedure involved and the revision and equities as presented by Exhibit 78 was merely to take the revised sand thickness maps and the table of computations, the revised data, and care a correction through that involved in the pool in No. 7 Sterba and also that it's simply a correction of a mere computation of information on the equity table.

Q. Do you have an opinion as to the fairness or reasonableness of the revision of interest as set out on Exhibit 78?

A. I do.

Mr. Adams: We object to that because it's for the Commission to decide whether it's fair and reasonable.

Reford Bond, Jr.: We object for the same reason.

Chairman Bond: The Commission decides that, but he can give his opinion as an expert.

Mr. Adams: Note our exceptions.

Witness:

A. I do have an opinion, and that is that the equity as shown by Exhibit 78 is fair and reasonable.

[fol. 1206] Q. As between the tracts?

A. Yes, as between the tracts.

Reford Bond, Jr. cross-examines the witness further:

Q. Mr. Kaveler, did you ascertain the porosity of the sand in the Sterba No. 7?

A. In the Sterba No. 7?

Q. Yes.

A. I would have to refer to Mr. Montgomery and ask if there were any cores recovered.

Q. Was that the factor used in revising the figures of equity.

A. There were no cores taken in Sterba No. 7.

Q. You had sand samples?

A. Yes.

Q. And electric logs?

A. Yes, sir.

Q. But the porosity factor was not considered in there?

A. It was not determinable at the location of the Palmer-Sterba No. 7, for the reason cores were not taken by Mr. Palmer.

Q. Were there any other factors taken in the formula known in the Sterba No. 7 besides the top and bottom sand?

A. Of course, all the equity factors were known as applied in the Sterba No. 7 well, the equities in the sand established were——

Q. I should qualify the question, limited to whether or not you should obtain any information from the Sterba No. 7

[fol. 1207] well as to other factors used in the formula in determining that.

A. It's so difficult to answer if. But all the other well factors were there on other wells, also determined on Sterba No. 7 as to equity.

Q. In other words, you were not able to help on the sand.

A. It's not essentially necessary to do that because we know the porosity.

Q. And you were not able to determine it from that point?

A. That is correct.

Q. And you were not able to use that point as a control point in determining the percentages of connate water?

A. The answer is yes and no. We have reliable information on connate water in the Medrano sand.

Q. Yes, you determined it from control points and didn't use it in Sterba No. 7.

A. That is correct.

Q. And you did not use it in determining the permeability?

A. That is correct. Permeability as people know it.

Q. As a matter of fact, the only factors that you gave from that control point was the top and bottom of the sand?

A. The answer is generally yes, you have an electric log.

Q. As far as you used them?

A. As far as I use them.

Q. So far as the Committee used them, so far as they were determined in using them.

[fol. 1208] A. Yes.

Q. Now, you should have determined the porosity from that point.

A. If Mr. Palmer had been that thoughtful to core his well, we could have.

Mr. Adams examines the witness:

Q. You used the income factor on that well, of course?

A. Yes, sir.

Q. That is all.

Witness excused.

Mr. Williams: That is all of the evidence of the applicants, if the Commission, please.

Chairman Bond: Very well.

Motion to Amend Petition and Action Thereon

Mr. Williams: Come now the petitioners and ask leave to amend the petition herein to conform with the evidence today introduced by substituting the table of percentage participation entitled Exhibit B and introduced in evidence as Exhibit 78 for Exhibit B now attached to the recommended plan of unitization attached to said petition.

Chairman Bond: Received. Counsel may amend the plan to conform to proof. But the operating counsel may oppose the plan to conform to the proof of their estimation, you contend that it conforms to proof as offered today in testimony.

Mr. Williams: That is correct. We rest.

[fol. 1209] **Demurrers, Motion to Dismiss and Denials Thereof**

Mr. Adams: "DEMURRER

The Palmer Oil Corporation desires to demur to proponent's evidence, if the Commission please, on the grounds that it does not support or prove the case as required under the law to which it was brought, justifying the nature of the order of the Commission as to the proposed plan of unitization of the area involved under the promulgation of any other plan of unitization as by law provided."

Chairman Bond: Overruled, exceptions allowed.

Reford Bond, Jr.: If the Commission please, we would like to offer a demurrer and special demurrer to dismiss separately, and if the Commission has no objection you may rule on all of it at the same time.

Chairman Bond: Very well.

Reford Bond, Jr.: "DEMURRER

Comes now the royalty owners appearing in the caption to answer filed herein and Clyde Kahle and Mark Kahle and Bob White Oil Company, overriding royalty owners and Tom Potter, lessor and operators and generally demurred to the applicant's evidence on the grounds that the applicants have wholly failed by all

of the evidence and facts to be adduced therefrom, to show a state of facts sufficient to entitle the applicants [fol. 1210] to any order against the protestants."

"A Special Demurrer

The protestants especially demur to the protest of the applicants on the following grounds:

(1) That no plan has been proved or offered the Commission for unitization of the West Medrano Pool as contemplated by the statutes of the State of Oklahoma.

(2) That the claimed and attempted plan of unitization of the applicants is not feasible.

(3) That the West Medrano Pool is not subject to unitization under the statutes for the reason that the same has not been defined by actual drilling.

(4) That the evidence of the applicants affirmatively shows that the statute is not applicable to the West Cement Pool of which the Medrano pool is a part, in that statute expressly exempts said field from the operation thereof, in that the evidence shows that the West Cement field was discovered more than twenty years before the statute became effective.

(5) That the evidence discloses that the unitization of the West Medrano pool is for the common good and general advantage of the owners of the oil and gas rights.

[fol. 1211] (6) That the evidence fails to establish a right on the part of the applicants to include the following described tracts in the proposed plan, to-wit:

Tracts being numbered on plaintiff's Exhibit A attached to the application, to-wit: 1, 2, 3, 4, 5, 7, 16, 21, 22, the northern part of 71-44, the NE part of 44-51 the NE part of 52-59-60-61, the East part of 62, 63, 66, 67, 68, 69, 70, 50, 33, the southern part of 19 and the southern part of 6."

"The Notice to Dismiss

The said parties move the Commission to dismiss the said application for the reason that the applicants

have not offered to due equity and to fully develop the leases in the pool."

Jack Page: If the Commission please, in order to save time, I would like to on behalf of D. E. Johnson and M. L. McIntire, accept the same demurrers and motion to dismiss.

Chairman Bond: Very well.

Mr. Adams: We would like to adopt, on behalf of the Palmer Oil Corporation, the demurrer and motion to dismiss as offered by Mr. Bond and in addition thereto, one further ground under the special demurrer, and that is the evidence consistently shows that the area is *not* one common [fol. 1212] source of supply.

Chairman Bond: Palmer Oil Corporation adopts the Special Demurrer offered by Reford Bond, Jr. and the special questions just dictated.

Reford Bond, Jr.: If the Commission please, we desire to offer the additional ground just offered by the Palmer Oil Corporation.

Chairman Bond: Let the record show that Reford Bond, Jr. adopts that portion offered by Mr. Adams of the Palmer Oil Corporation.

Chairman Bond: Anything offered further? The General and Special Demurrer and motion to dismiss are overruled, and exceptions allowed.

The Commission will recess until 10:00 o'clock tomorrow morning.

[fol. 1213] J. B. McKee, called as a witness, being first duly sworn, testified as follows:

Direct examination

By Mr. Adams:

Q. State your name and your address.

A. J. B. McKee, Wichita, Kansas.

Q. Mr. McKee you are a geologist, are you?

A. Yes.

Q. Will you please state your educational qualifications, your experience and qualifications generally in that respect?

A. I am a graduate of the University of Iowa, where I

majored in geology and for the past twenty-one years I have been employed in that profession.

Q. By whom have you been employed in that twenty-one years?

A. Approximately ten and one-half years in Texas and Arkansas where I have been engaged in geology work, at Ardmore and what they call the South Oklahoma District and in Michigan in what they call the Michigan District, and in the border state of Kansas.

Q. Since that time you have been doing geological work?

A. Yes.

Q. Mr. McKee, have you had any geological experience in the West Cement field in Caddo county, Oklahoma, particularly with reference to the Medrano sand found in that field?

A. The most of my experience has been work that I have done for Mr. Palmer of the Palmer-Sterba lease.

[fol. 1214] Q. By Mr. Palmer, you mean the Palmer Oil Corporation?

A. The Palmer Oil Corporation, yes, and on the Sterba lease.

Q. Did you participate in the work of the various wells that have been drilled on the Palmer-Sterba lease in this area, as a geologist?

A. Not in all of them.

Q. What well have you participated in?

A. The No. 3.

Q. You are speaking of the Medrano sand?

A. That's right,—the No. 3 was drilled to the Medrano. Also on No. 7 I have been more or less associated with No. 5 and 6. But I was not present while they were being drilled.

Q. But you have examined samples of oil of those wells?

A. Yes.

Q. Have you made a study of the Schlumbergers of other wells that were drilled in the area into the Medrano sand?

A. A few others; not all of them.

Q. Have you with respect to the Magnolia-Hammons-Henly No. 2?

A. Yes.

Q. State if you know what is reflected in the presence or absence of the Medrano sand in the Palmer-Sterba No. 6

well, going to the board and pointing it out on Exhibit 68, show its location, which is shown there in that plat on the board.

A. The Palmer-Sterba No. 6 is drilled in the Northeast of the Southwest of the Southwest of Section 35. It was drilled on what was known as the Sterba fault.

[fol. 1215] Q. Well, was there any Medrano sand or any evidence of oil or gas in that well?

A. That well missed the Medrano sand.

Q. In other words, it reached the point where it should have had the Medrano sand, but the Medrano sand was absent?

A. That's right.

Q. Referring to the other Exhibits on the board will you pick out one that might illustrate that?

A. I don't think there's one on the board to represent No. 6.

Q. Well, by illustration, pick out one of those Exhibits and show to this Commission how that well might have been drilled and still not find the Medrano?

A. Well, No. 6 well was drilled to a point approximately in this location (witness indicates point on Exhibit on board) in the Medrano zone, it was drilled through the Conglomerate, but missed the top of the Medrano sand in that area,—it was drilled on the fault plane and when it reached this point of sand it dropped down and the well went into this shale section which separates the Medrano from this side of the fault (indicating on the plat) and the Medrano on this (indicating side of the fault).

Q. Now, at the point of the well to which you have referred, approximately how many feet of displacement is there in the Medrano sand on the one side of the fault and the Medrano sand on the other side of the fault,—to refresh your recollection, is it approximately 250 feet?

[fol. 1216] A. Approximately that, I believe.

Q. And that 250 feet consists of what?

A. Shale.

Q. Now, in respect to the Sterba No. 5 well, will you indicate on Exhibit 68, to the Commission, approximately the location of that well?

A. No. 5 well was drilled at this point (indicating on

plat) which is the Southeast of the Northwest of the Southwest of Section 35, which also cuts the fault, at this position,—this is the position of the hole in relation to the fault (indicating on plat) it is drilled in this barren zone, drilled in between the sands in a barren zone.

Q. What was the displacement between the Medrano sand on the one side of the fault and the Medrano sand on the other side of the fault at the location of No. 5 well?

A. Henry has that—285 feet here.

Q. 285 feet?

A. Yes, that's what is shown here.

Q. What did that displacement consist of?

A. Shale.

Q. Was there any limestone in that displacement?

A. The samples failed to show any limestone.

Q. Now, you say you did make some study with reference to the Magnolia-Henly No. 2,—will you reflect that position on that Exhibit?

A. The Northeast of the Northeast of the Southeast of [fol. 1217] Section 35. It is also one of the fault line wells.

Q. Approximately what does it reflect as to the displacement between the Medrano sand on one side of the fault and the Medrano sand on the other side of the fault?

A. I don't remember the exact feet.

Q. Was it approximately 300 feet?

A. Yes, it was.

Q. And what did that displacement consist of?

A. Sir, that displacement consisted of shale, too. It also drilled to this section (indicating on plat) in barren area, where the sand is absent.

Q. Mr. McKee, you were of the No. 7 Sterba well?

A. Yes.

Q. And did you take samples as that well was drilled?

A. The crew did, yes.

Q. Well, you were on the well and examined the samples as they were taken?

A. Yes.

Q. Did you keep field notes at that time?

A. Yes.

Q. If you will refer to your field notes, what will they show, what was the depth in that well,—first, what was the elevation of that well?

A. 1505, derrick floor.

Q. What was the depth in that well in which there were first reflected samples showing the presence of oil?

[fol. 1218] A. In the Medrano section?

Q. Yes.

A. The first oil sand was in the neighborhood, well, it was noted at 5875 feet,—there was a 7-foot correction, which made 5868, the first oil, and there was a further correction of about 4 feet from which would make 5864 as the point the first oil stained sand was found.

Q. Now, what else was there at that particular place indicating the presence of oil, if anything?

A. We lost circulation at about 5867, which was the first time circulation had been lost during the progress of the drilling of the well.

Q. Is that the correct depth?

A. 5867 is the correct depth, yes.

Q. Okey.

A. We again lost circulation at 5885,—that is also a correction, and circulation again lost at 5991.

Q. From your experience as a geologist and your experience as a drilling of these wells in the Medrano section of this area, at what depth is, in your opinion, was oil first encountered in this Palmer-Sterba No. 7 well?

A. It would be my opinion that the first oil was,—the first oil stained sand was encountered at 5864. The fact that we lost circulation would indicate that the porosity, the fact that the sand was stained, would indicate that it carried oil. We thought well enough of it that we set the [fol. 1219] pipe at 5850, well above this porous zone.

Q. In your opinion, then, the top of the Medrano oil bearing sand in this well was at what depth?

A. 5864.

Q. 5864,—now, Mr. McKee, you attended a meeting of the geologists representing the drilling operators in this area, here at Oklahoma City, recently, in respect to the fixing of the top of the Medrano sand in this Sterba No. 7 well, which has been referred to, this you did, did you not?

A. Well, I attended a meeting,—I wouldn't say that was the purpose of it.

Q. Where was that meeting held?

A. That meeting was held in the Phillips offices in the First National Building.

Q. Who was present at that meeting?

A. Mr. Montgomery, Mr. Muir, of Amerada, Mr. Richards of the Gulf, Mr. Richards of the Anderson-Prichard, Mr. Brauchli, Mr. Stephens, myself and other geologists, I don't know whether I recall all of them——

Q. Well, state to the Commission what occurred at that time?

A. As I understand it, the meeting was called——

Q. Don't say as you understand it,—just what occurred.

A. Well, the meeting was called to make the map that was presented in evidence here yesterday, showing the amount of sand below a depth of 6000 feet on the Sterba leases. These maps were supposed to be prepared at this [fol. 1220] meeting. When I arrived at Oklahoma City and went up to the meeting, the maps were already prepared and we were asked to examine them and approve or disapprove of them. I indicated that information I had was such that, didn't conform,——

Q. What information did you not agree with?

A. The top of the Medrano sand in the No. 7 Sterba,—I told them I didn't agree with that top.

Q. Go ahead?

A. They said that they had already set the top and that the geologists on the committee said they felt they didn't want to make any changes and as a consequence I didn't approve of the map at that time. I approved the manner in which the map was made, I think that is all right, but as far as the method of working that out, I didn't approve of that.

Q. Now, have you prepared some maps showing the top of the Medrano sand in the Palmer-Sterba No. 7, as reflected in that, as reflected in your field notes?

A. Yes.

Q. Do you have those with you?

A. Yes sir.

Q. Mr. McKee, I hand you what has been marked by the Reporter as Exhibit 79, and ask you to state what that is, and by whom was it prepared?

A. This is a map of the Southwest Quarter of 35-6N-10W,

pertains to the Medrano sand, it's an Isopach map, showing the Medrano oil sand below a depth of 6000 feet from the [fol. 1221] surface,—this map was prepared by myself.

Q. Handing you what has been marked by the Reporter as Exhibit No. 80, I will ask you to state what that reflects and by whom was it prepared?

A. This map was prepared by myself, covers the Northwest Quarter of Section 35, pertains to the Medrano sand,—an Isopach map showing Medrano sand where the top is encountered below 6000 feet from the surface.

Q. Was that map prepared by you?

A. Yes.

Q. Handing you what has been marked by the Reporter as Exhibit 81, I'll ask you to state what that is?

A. This is the map of the Southwest Quarter of Section 35-6N-10W Caddo County, Oklahoma, prepared by myself and pertaining to the Medrano sand. It is a geological map with the data of the top of the Medrano sand.

[fol. 1222] Mark Adams examines the witness, Mr. McKee:

Q. Handing you what has been marked by the Reporter as Exhibit 82, I will ask you to state what it reflects and by whom it was prepared.

A. That map is the southwest ¼ of section 35, 6N, 10W, Caddo County, Oklahoma in the Medrano sand, this isopacious map and net Medrano oil sand and prepared by myself.

Q. Do these exhibits, 79 to 82, both inclusive, in your opinion set forth correctly the production of the Medrano sand in the various locations, as these maps indicate?

A. Yes, sir.

Q. We would like to offer in evidence Exhibits 79 to 82 inclusive.

Chairman Bond: Received.

Mr. Adams continues with the witness:

Q. Mr. McKee, you have made some study of the isobaric map, Exhibit 68, with respect to pressure differentials that exist on one side and the other side of the faults that intercept the West Cement area?

A. Yes, sir, I have studied these maps.

Q. And with relation to the displacement that exists and are reflected in the Palmer-Sterba No. 5, Palmer Sterba No. 6 and Magnolia-Cement-Henley, that you referred to, do you have an opinion as to whether the Sterba fault constitutes a barrier in that section?

[fol. 1223] A. Yes, sir, I have an opinion.

Q. State what that opinion is.

A. It constitutes a definite barrier, there is neither the oil or gas from one side of the fault could travel to the other side.

Q. I believe that is all.

Chairman Bond: The Commission will recess for 5 minutes.

[fols. 1224-1225] Chairman Bond: Gentlemen, are you ready to proceed.

Mr. Adams examines the witness who was on the stand before the five minute recess, witness being Mr. McKee:

Q. Referring to Exhibit 54-R, which is now on the blackboard, will you state whether or not the number of feet of impervious shale existing in the displacement of the Meirano sand on one side of the Sterba fault and on the other side of the Sterba fault on the location of the Palmer-Sterba No. 5 and Palmer-Sterba No. 6 and Cement-Henley No. 3, that you just testified to, or do you want to correct these number of feet.

A. Exhibit 54 shows that the amount of displacement in the Magnolia Cement-Henley No. 2 is approximately 300 feet, now, Palmer-Sterba No. 5, the displacement is approximately 400 feet, and the Palmer-Sterba No. 6 is 490 feet.

Q. When you speak of displacement you speak of the shale on one side of the fault and on the other side of the fault.

A. Yes, sir.

Q. That is all.

Mr. Williams cross examines the witness:

Q. Mr. McKee, as I understood your testimony, the source of your information was derived from the fact that you were actually on the Palmer-Sterba wells 3 and 7 and examined the samples of these wells and in addition you examined the samples taken from the Palmer-Sterba wells 5 and 6, and that you had also seen the electric logs on these wells and the electric log on the Magnolia-Henley [fol. 1226] well No. 2, is that correct?

A. Yes, that is correct.

Q. What other studies, if any, have you made of the field?

A. Well, I have seen some of the other Schlumberger logs. I have read reports prepared by the so-called geological committee; I have gone over to some extent the report by the engineering committee, although I am not an engineer; and I have talked to other geologists that have worked in this area. I know something about what the section is and what the structure is like, I know something of what the section is like and what the structure is like from that information.

Q. But your examination of the cuttings and samples is limited from the cuttings of the Palmer-Sterba wells that I have made reference to?

A. Yes, sir.

Q. And also you have seen the electric logs from other wells in the field, you do not, or you are not in position to name just what ones and what they were.

A. No.

Q. Have you sat on any other wells in the field?

A. Some of the shallower production.

Q. As far as the Medrano production is concerned?

A. No.

Q. You have not examined any of the samples and logs [fol. 1227] of the Phillips-Oaks No. — ?

A. No, but I saw the log.

Q. You have seen the Schlumberger log?

A. Yes.

Q. But you have not examined the samples from that well?

A. No.

Q. And I believe it's your testimony that the amount of fault displacement, the location of the Sterba No. 6 well is approximately 400 feet.

A. That is approximately what it shows.

Q. And that the displacement of the location of the Sterba 5 well is approximately 400 feet?

A. That is approximately what the map shows.

Q. And the displacement of the Magnolia-Henley well is about 200 feet?

A. That is what the map shows.

Q. In other words, the amount of displacement is all, as you proceed in a northeasterly direction up structure?

A. 100 feet.

Q. 100 feet, and that is information that you have taken from the maps that are here introduced now in evidence?

A. Yes, sir.

Q. Now, Mr. McKee, in examining your exhibits 79, 80, 81 and 82 and comparing them with the comparable exhibits [fol. 1228] offered yesterday by the applicants, I note that the only particular difference between the two sets of exhibits is that, brought about by the difference of opinion, is the top of the Medrano in the Sterba Well No. 7, is that statement approximately correct?

A. Yes.

Q. I am wondering, Mr. McKee, if you will be so kind as to take the applicants' exhibit No. 75 which appears to be a corresponding exhibit to your Exhibit No. 82 and by superimposing one upon the other in the light in any manner that you choose to do that, and note on applicants' Exhibit No. 75 with a pencil the difference between your exhibit and applicants' exhibit.

A. (Witness goes to window to prepare exhibit as requested by attorney.)

[fol. 1229] A. You understand this can't be done accurately.

Q. Yes, I understand.

A. The map is on that scale and we have to consider——

Q. Well, that is due to distortion from printing?

A. Yes.

Q. Well, you can make that explanation in your testimony,—now, Mr. Witness,—as I examine Exhibit 75 and note that you have indicated on that Exhibit with a pencil

certain lines of difference between this Exhibit and No. 82, is that correct?

A. Yes.

Q. And the effect of this change is a calculation of 100 feet at the top of the Sterba fault line and on Exhibit 75 the 100 foot line as it crosses at this point (indicating on plat) and you say that is the reason for the moving of that contour line?

A. Yes.

Q. And other than you have indicated on there, there is no real difference between the two Exhibits?

A. No, sir.

Q. And you testified that these lines might not be accurate, due to distortion of scale?

A. Yes.

Q. Which wouldn't be a great variance?

A. No.

Q. Now, Mr. McKee, would you take Applicant's Exhibit No. 77 and your Exhibit No. 80 and do with respect to those [fol. 1230] two Exhibits what you did in respect to 75 and 82?

A. (Witness takes the two Exhibits mentioned and goes to window to comply with Counsel's request.)

Q. Now, Mr. McKee, for the purpose of the record, on which Exhibit did you note the change?

A. On No. 77.

Q. Now, I wonder if you would step to the bench with those two Exhibits and point out to the Commission the variance you made? (Witness steps to the bench as requested.)

A. The difference in these two maps, the line showing the area where the top of the Medrano sand would be encountered below 6000 feet, which shows, which is shown by this line (indicating) shoves this line (indicating) slightly to the Southwest.

Chairman Bond: Is that indicated by the broken dotted line?

A. Yes, the principal line on Exhibit 77 is a dotted line, on Exhibit No. 80.

Q. Now, I'll ask you if you will take Applicant's Exhibit

73 and your Exhibit 81 and make like comparison on those two Exhibits?

A. (Witness goes to window, as before.) Mr. Williams, this one I can't be done very well. The scale is too much distorted, due to the way the paper has shrunk.

Q. Well, then, draw it on the basis of the figures possible variance that would be reflected?

[fol. 1231] A. (Witness retires to window as before.)

Q. Now, you have noted on Exhibit No. 73, with a pencil marking along the 4400 foot or 4500 foot contours the approximate variation?

A. Yes.

Q. Now, as you have said with reference to the others, these are not exactly correct, due to the distorted scale?

A. Yes.

Q. But they are approximately right?

A. Yes.

Q. And, as in the case of the other Exhibits, the difference is due to the difference in opinion of the top of the sand in the Sterba No. 7 well?

A. Yes.

Q. Now, I believe you said awhile ago that with the exception of that, the method adopted by the committee in the preparation of map met with your approval?

A. Yes, sir.

Q. Now, I am wondering if you would as you did in the case of the other Exhibits, take Exhibit 73 and Exhibit 81 to the bench and point out to the Commission the difference in the datum as to the top of the Medrano sand along these 4400 foot and 4500 foot contour lines?

A. (Witness goes to bench and complies with Counsel's request.)

Chairman Bond: The difference is indicated by your [fol. 1232] lead pencil marks?

A. Yes, sir.

Q. Now, Mr. McKee, do you agree with the Committee's pick of the top of the sand in the Phillips-Oaks No. 2 well?

A. I haven't gone into the Phillips-Oaks No. 2 well,—the only time I examined the Schlumberger log on the Phillips-Oaks was one time Jack (Mr. Montgomery) and I were checking the No. 2 Oaks with the No. 7 Sterba.

Q. Then you haven't examined the log of the Phillips-Oaks No. 2 well with respect to this particular problem?

A. Which problem?

Q. The top of the sand.

A. In the No. 2 Oaks, not the No. 2 Oaks, no.

Q. That's what I mean with reference to the top of the sand in the No. 7 Sterba well, what did you make of the Schlumberger of that well?

A. Well, we used it,—we used the sample and we used the same log.

Q. Well, you used that information, yourself, in determining your information as to the top of the sand?

A. Yes.

Mr. Williams: I believe that's all.

Examination by Mr. Adams:

Q. You have used the expression, Mr. McKee, in your testimony, that you, "looked at", Schlumbergers of certain [fol. 1233] Medrano wells in the West Cement Medrano area,—is that a term among geologists, whe, you say you "looked at", something,—does that mean you have studied it?

A. It means you have studied it to a greater or less extent, like you "look" at something else.

Court Reporter's Note: The witness McKee is excused.

[fol. 1234] C. H. Keplinger, called as a witness, being first duly sworn, testified as follows:

Direct examination

By Mr. Adams:

Q. State your name and address, please sir.

A. C. H. Keplinger, Tulsa, Oklahoma.

Q. Mr. Keplinger, you have studied both geology and petroleum engineering?

A. Yes.

Q. For the benefit of the Commission, will you state what

your educational qualifications are and what your experience has been?

A. I am a graduate of the University of Tulsa, Tulsa, Oklahoma where I obtained a B. S. degree. I studied Petroleum Engineering, Chemistry and the natural Sciences, —after that I attended George Washington University in Washington, D. C. and during that time I had a fellowship in the Physics Department. I graduated from there in 1933, with a M. S. degree. During the summer of 1932 I attended the University of Guettingef, in Germany, and obtained information for a Thesis relating to the geophysical of oil——

Q. Was that Thesis published?

A. It is, in the Library of the George Washington University, yes.

Q. All right, go ahead with your experience.

[fol. 9235] A. That's all the primary education in Universities, but since that time I have kept up with Geological and Engineering matters through the various technical societies in the Institute of Metallurgical Engineers by association with the American Association of Geologists and American Society of Mechanical Engineers, I have endeavored to keep up with the demands of Petroleum Engineering and Geological progress.

Q. During the time that you were perfecting your schooling, your education in theory, were you endeavoring at the same time to learn practical opetations in the oil and gas business?

A. Yes.

Q. What did you do in that respect?

A. Well, going to school I worked in the oil fields in summers and on Saturdays, worked on oil wells, and during the time I was at the Universities I worked in the oil fields during the summer time, for practical experience. I worked every summer and while in the University I worked at Marshall and LaVerne in the Seminole field. I only missed one summer,—that was the summer I was in Germany.

Q. After you got after College, after you got your Master's degree, what did you do then in respect to pursuing your education?

A. I went to work with the Laflin Brothers Drilling Com-

pany in Texas, where they were drilling at that time some of the deepest wells in the World, 9000 to 10,000 feet. I worked on the drilling of those wells, and was out there [fol. 1236] three months one summer. I had formerly worked for Shell and they called me and I went to work as Engineer.

Q. When you say Engineer, you mean petroleum engineer?

A. Yes. In 33 when I worked for Shell, I worked in the fields of Oklahoma and later in 1934 moved into their General Office in Tulsa.

Q. When you say "Shell," you mean the Shell Oil Company?

A. Yes, I think it is the Shell Petroleum Company, it has been changed.

Q. All right.

A. In 1934 I was assigned the task of setting up the production laboratory for Shell,—I made arrangements for a place and set in and set up the equipment for work in the oil saturation, water saturation, and lime content, for determining the content of the sand in the various physical properties, which can only be determined by laboratory methods.

Q. You supervised the setting up of that equipment in the Shell organization?

A. Yes and after that was finished I was transferred to California and worked out of there, out of Los Angeles to make studies of reservoir conditions in the various pools where Shell operated in California,—also, we have laboratory methods of determining porosity of permiability.

Q. Very well, what next came in your work?

A. I came back to Oklahoma and shortly thereafter was assigned to the Lucien pool,—that's one of the new pools [fol. 1237] in the State. I was made Engineer to work in the Lucien pool. My main problem there was developing,—the field was almost developed but the main problem was to determine reservoir stata of the Lucien pool, make estimates of the rate of production and furnish that to the Corporation as to the maximum allowable, the Lucien pool should have for efficient proration purposes. From there I was transferred to Tulsa to study gas injection

problems concerning the Company in the Mid-Continent fields in Texas, Kansas and Oklahoma.

Q. As what?

A. As Production Specialist.

Q. Did you make such study?

A. Yes, I made several of them, the chief study of which took six months was studying the gas production operations in the Tonkawa field, one of the first places where gas injection was practiced extensively by Shell, in Oklahoma. We had the benefit of several years experience in this by which the Company had experience in the gas, oil and water method and gas pressures, input wells,—— [fol. 1238] (Henry Keplinger is on the stand and being examined by Mr. Adams.)

Q. What was that practical experience?

A. I believe I was transferred into the evaluation of oil properties in the petroleum engineering section, and first was to evaluate water flooding possibilities in Eastern Oklahoma and Southeastern Kansas.

Q. What was your position with Shell Oil Company at that time?

A. Production specialist in that department.

Q. Very well, proceed.

A. From there, one year later, I was transferred to Kansas as a Division Evaluation and Production Engineer in the petroleum engineering section. I went to Wichita immediately and then transferred to McPherson, Kansas, where the Division office was, and during that 3½ years there I worked on the studies of petroleum reserves and proration of oil and gas and related matters.

Q. Then where did your services take you?

A. I was transferred to the Oklahoma Division and stayed in Tulsa in a similar capacity for which Shell operated in Oklahoma, they had some 15 or 1600 wells producing at that time.

Q. In the State of Oklahoma?

A. Yes, sir.

Q. How long did you stay in that position?

A. I was there about one year and was transferred in the Illinois area where we had supervision over the Illinois

[fol. 1239] basin, including Illinois, construction in Indiana and Michigan.

Q. Then did you return to Oklahoma?

A. I returned to Oklahoma a short time after, was the Division Engineer in the Oklahoma section for about four or five months; at which time I left the service of the Company and formed a partnership with Mr. Joe Wannemacher for rendering petroleum engineering services to the oil industry.

Q. How long ago has that been, Mr. Keplinger?

A. November, 1944.

Q. Since that time you have been continuously engaged in the practice of petroleum engineering on a consulting basis?

A. Yes, sir; our firm has gradually increased its facilities and we are continually studying the value of reserves in the Oklahoma and mid-continent area and values.

Q. What technical societies, if any, are you a member and what if any, offices have you had or do you hold in such technical societies, which societies are related to conservation and relation to production in respect to oil and gas?

A. The American Institute of Mining Metallurgical Engineers have a petroleum section, I am a member of that. And, from time to time have held offices both in the national chapter and local chapters and one time I was Chairman of the Mid-Continent section. One time I was chairman of the Petroleum Engineering Division of the National chapter.

[fol. 1240] Q. What other societies?

A. American Society of Mechanical Engineers have a petroleum division and at one time I was Chairman of the Mid-continent section of the society. The American Petroleum Institute is continually trying to determine the proper production practices in many committees, and I have served on several committees in the past and at the present time I am on the secondary recovery committee of the Mid-Continent section.

Q. Any other societies?

A. I am a member of the American Association of Petroleum Geologists and a member of the Independent Pe-

troleum Association of America, I believe that is all, that is about all of them.

Q. Have you made a study of the Medrano sand section in the, what is termed, the West Cement Field in Caddo County, Oklahoma?

A. Yes, in the latter part of 1946, our firm was asked by the Palmer Oil Corporation to study the West Cement Medrano formation in the West Cement area.

Q. Will you detail as well as you can the study which you have made in this respect?

A. The study was of the geological conditions and the petroleum engineering factors enter into such a study; First we attempted to obtain all of the information that we could relative to the completion of the individual wells in the field proper which is producing either oil or gas and [fol. 1241] the dry holes around the pool so that we would obtain a complete structural picture of the Medrano formation. After the geological investigation, we attempted to determine the producing characteristics of the reservoir, past oil and gas production of the individual oil wells was obtained or estimated from the tests of gas-oil ratio which the Corporation Commission takes periodically in that field, and the production and pressure history of the gas wells which are producing in the Cement Medrano field out there were obtained from the Corporation Commission files. After knowing the structural fractures and the performance of the individual reserves in this pool, we were able to obtain a picture of what did happen and what might happen in the future operation of this reservoir under various production methods.

Q. You said that you attempted to obtain, did you obtain this information?

A. We never, in some cases, did get all the information that we normally would have liked, some wells which might have been critical to our analysis, the data was not available in the Corporation Commission files and in such cases it was obtained through tracts to the field, to the field departments of the various companies, that is the reason I put the word "attempt" in there. Now, there are some threads that would be helpful that we did not obtain.

Q. You have obtained all of the available information [fol. 1242] on the area involved?

A. Well, the Schlumberger logs and the production records and all logs that are on file in the Corporation Commission office here in Oklahoma City.

Q. Have you attended the hearings in this matter and attempted to analyze all of the facts and all of the opinions that have been expressed here in evidence?

A. I have attended all of the hearings in the West Cement Medrano case, not all of them, and have had the benefit of the work of the other witnesses and exhibits that have been introduced in this case, particularly the engineers report of the West Cement Medrano area which is part of the evidence of testimony in this case.

Q. You have attended all of the hearings since and including January 5th, haven't you, Mr. Keplinger?

A. I believe that is correct.

Q. Have you studied the structural maps, sand thickness maps, iso-baric maps and all other exhibits that you have offered here in evidence?

A. I have.

Q. Have you studied all of the electric logs and core analyses that have been offered here also?

A. Yes, sir.

Q. Are there any Bureau of Mines reports with respect to these areas, or this area, which came to your attention? [fol. 1243] A. Yes, the Bureau of Mines has made two reports of the West Cement Medrano pool. The First one was made just prior to the discovery of the oil related to the gas production of the West Cement Medrano. It was made during the war and at the request of the Petroleum Administrator of War to determine the reserves which were indicated for the gas area. Very shortly after the Bureau of Mines' report of gas production was published, Stephens Petroleum Company completed their Pierson No. 1 located in the Southwest part of the Southeast quarter of Section 35-6N-10W as an oil well, and immediately upon the completion of this well, the Bureau of Mines, I believe of their own volition are interested in this matter, operators took a series of bottom-hole pressure

tests and analyses of the oil being produced and shortly thereafter prepared a report giving this data.

Q. Did you study that report?

A. Yes, the Corporation Commission has a copy on file and it was made available to us for study.

Q. In addition to all of the technical data that you have studied, have you gone into the field, the West Cement Field, and particularly to the West Cement Medrano area, and made a study of the wells in operation?

A. Yes, I have visited the field several times with the Palmer Oil Company superintendent and have checked various production performances which we thought were necessary in order to completely understand the past operations of the reservoir.

[fol. 1244] Q. And how it's operating today?

A. Yes, sir.

Q. From your study in this respect, have you reached any conclusion as to whether or not the Medrano section in the West Cement field constitutes one or more than one sources of supply?

A. I have.

Q. Will you express your opinion thoroughly in that regard?

A. My opinion is that it constitutes several common sources of supply and the reasons are both geological and from the production performance of the wells in the respective segments.

Q. Do you have any exhibits which will better illustrate the sand than some of the exhibits which, in your opinion, than some of the exhibits that have already been introduced in evidence?

A. Yes, from the geological viewpoint, Exhibit No. 54-R is an interpretation of the top of the Medrano sand in the various segments of the West Cement area and I have checked the tops on this map from the Schlumberger maps or logs and find them to be very reliable and agree with my interpretation of the tops in a few cases, the way I would interpret the Schlumberger logs, there may be a few feet difference, but as a whole the way the picture is given it's comparable to our interpretation of the same facts.

Now, we have taken the oil reserves which was and has been designated as Segment "C" on Exhibit 54, I might put C on exhibit 54-R so that it can be identified in the [fol. 1245] records. We have particularly been interested in determining the reserve in which the Palmer-Sterba oil zone, the main oil zone is located and that is what has been designated as Segment C and, first we have analyzed the wells, mainly Palmer-Sterba No. 6 located in Section 36-6N-10W, also Palmer-Sterba No. 5 located in the southwest ¼ of Section 35, the Magnolia-Cement-Henley, located in the southeast ¼ of Section 35, these three wells were drilled and failed to encounter the Medrano formation. We have studied them in detail. Then Segment C, which Tom Palmer was interested in——

Q. Palmer Oil Corporation, you mean?

A. Yes, Palmer Oil Corporation—is bounded on the south, was determined, was the Hartshorn field, and there was one well named the Magnolia-Lindsey No. 10 located in the southeast ¼ of Section 36 which was drilled and failed to encounter the Medrano formation. These four wells to which I have referred were studied in detail. Next, we proposed from cross-sections which show the attitude of the Medrano formation, one cross-section going north and south to Palmer-Sterba No. 5 and Exhibit 54-R on which I will designate that as cross-section A-A*, that cross-section will show the strictly deepening characteristic of the Medrano and will show a complete lack of formation, Medrano, on the north side of the fault and Medrano formation on the south side of the fault.

Q. What was the displacement of the Medrano formation on either side of the fault?

[fol. 1246] A. The displacement of the Medrano at the top of the Medrano on the north side of the fault to the top of the Medrano on the south side of the fault is approximately 600 feet, 560 feet, I believe, the cross-section shows them and we have gone through the field.

Q. Of what does that displacement consist?

A. The displacement consists of the Medrano formation being dropped some 560 feet.

Q. Was the Medrano in that drop or was that some other formation in that drop, what is the formation?

A. Exhibit 66 will give you an indication of the mechanics of the top of the fault that exists near the Sterba No. 5 and the formation has been displaced some 560 feet or 600 feet between the Medrano sand on the north side of—sand there is a barrier, an impervious barrier of shale and impervious rock, so that there is no communication possible for fluid or oil or gas.

Q. Very well, proceed with your illustration.

A. Then, we have gone through the fault in an east-west direction to determine the condition of the formation, the Medrano formation, on either side of the Sterba fault and on either side of the Hartshorn fault, on exhibit 54-R, I have marked the line of cross-section B-B*, that cross section will show the wells starting with the Phillips-Hoax No. 1 located in Section 34 continuing through the Palmer-Sterba No. 3 and on east to the Magnolia-Cement-Henley No. 2 and on east to Magnolia Medrano No. 7 and that line [fol. 1247] of cross section goes through the fault and there is one well in the middle of the cross-section, the Magnolia-Henley No. 2 which completely miss the Medrano formation or the top of the Medrano on the north side of the fault and the Medrano formation on the south side of the fault are completely separated by impervious barriers.

Q. About how much displacement, in other words, what is the thickness of the barrier?

A. The displacement of the top of the Medrano on the north side of the fault, to the top of the Medrano on the south side of the fault is approximately 300 feet.

Q. Very well, proceed with your illustration.

A. We have also prepared in that line a cross section running from Phillips-Oaks No. 4 well in Section 34 through——

Q. East, does the line run east?

A. The line runs east.

[fol. 1248] A. The line runs East through the Palmer-Sterba No. 6, then on East through Magnolia-Cement-Henley No. 5, and on East through Magnolia-Medrano No. 6, then East on through Magnolia-Lindsay No. 10. That line or cross section has been designated C-prime on Exhibit 54-R,—on this line cross section there will be shown

two wells, one of which drilled into the Sterba fault and missed the Medrano formation. The other drilled through the Hartshorne fault plane but missed the Medrano formation. Then there's another line or cross section running from the Phillips-Oaks No. 2 through the Palmer-Sterba No. 7, then Eastward through the Palmer-Sterba No. 4, then the Stephens Petroleum, Pierson No. 1, East to the Anderson-Prichard-Hays No. 1, on East through the Magnolia-Medrano No. 11, on through Lindsay, Magnolia-Lindsay, rather, No. 12. I have designated this line (indicating on plat) on cross section as "D"-Prime. Then, in addition to the cross section, we have made a large scale map of segment "C", which is in our opinion is a common source of supply and in which the Palmer Oil Corporation owned a substantial part, a substantial portion of the oil reserve. In order for us to study the pro-ration, the relative portion that the Palmer Oil Corporation has of the total oil reserve in segment "C" in the Medrano field.

Q. Now, you have referred to the "West Cement Medrano" as a pool or field, do you mean the "West Cement Field," is that what you mean?

A. Yes, that's what I mean, when I refer to the "West [fol. 1249] Cement Medrano" pool.

Q. When you refer to the "West Cement Medrano" pool or "West Cement Medrano" field, that is all the entire area shown on Exhibit 54-R, in which there are several common sources of supply, and when you speak of a segment, such as segment "C" or segment "A" of the West Cement Medrano field that indicates the common source of supply as we have discussed?

A. That's right.

Reporter's Note: At this time the Commission recessed for the noon hour and, thereafter 1:30 P.M. on the same date the Commission is again in Session and the hearing proceeds as follows:

C. H. Keplinger, examined by Mr. Adams:

Mr. Adams: Will the Reporter read the last question and answer?

Reporter's Note: The last question and answer were read by the Reporter.

Q. You say there was only one well that was actually drilled in the Hartshorne fault to the Medrano sand?

A. Yes.

Q. What well was that?

A. That was the Magnolia-Lindsay No. 10 and the well is located in the Southwest of the Northwest of the Southeast of Section 36-6N-10W. The well was drilled approximately in that location, and failed to encounter any Medrano sand.

[fol. 1250] Q. Are there known facts other than the Magnolia-Lindsay No. 10 from which the Hartshorne fault can be determined?

A. Yes, the wells, such as the discovery well of the pool, the Magnolia No. 6, located in the Southwest Quarter of Section 36—, up the hole in the well the fault plane mud extended into the ———there was about 200 feet displacement,—that can be seen on Exhibit 70. In the bore hole of the Medrano No. 6 we will see shallower zones which can be seen in the fault plane and there is a displacement of about 200 feet in the bore hole of the Medrano 6. Although we have only one well, it is shown that the fault is there. That is one way that the fault goes through and the displacement is sufficient to cause a complete barrier between the North side and the South side of the Hartshorne fault. There are other things of structural interpretation to confirm the fact that there is a displacement and faulty conditions there.

Q. Now, you referred to the cross section illustrations having been prepared by you, do you have those?

A. Yes.

Q. Will you produce them?

A. Please (witness produces plats).

Q. You have produced them?

A. Yes.

Reporter's Note: At this time Exhibit marked respectively 83, 84, 85, 86 and 87.

[fol. 1251] Q. I hand you what has been marked by the Reporter as Exhibit 83 and ask you what is drawn to represent and by whom was it prepared?

A. Exhibit 83 was drawn to represent the top and the bottom of the Medrano formation through a line or cross

section running from the Phillips-Garn No. 5, South to the Phillips-Margaret No. 1, line is shown on Exhibit 54-R as cross section A-Prime. This cross section was prepared under my supervision.

Q. I hand you what has been marked by the Reporter as Exhibit 84 and ask you what it purports to represent, and by whom was it prepared?

A. Exhibit 84 was drawn to represent the top and bottom of the Medrano sand in a series of wells running along the cross section at an angle from Phillips-Oaks No. 4, then East to Magnolia-Lindsay No. 19. This is a line or cross section is indicated by C-Prime on Exhibit 54 and this was prepared under my supervision.

Q. With respect to what has been marked by the Reporter as Exhibit 85, state what that Exhibit has been drawn to represent and by whom was it prepared?

A. Exhibit 85 was drawn to represent the top and the bottom of the Medrano sand through a line of wells extending from Phillips-Oaks No. 3 to the Magnolia-Lindsay No. 12 and the Exhibit was prepared under my supervision.

Q. I hand you what has been marked as Exhibit 86 by the Reporter and ask you to state what that was drawn [fol. 1252] to represent and by whom was it prepared?

A. Exhibit 86 was drawn to show the top and bottom of the Medrano sand through a line of wells extending from the Oaks No. 1 to the Magnolia-Medrano No. 7, the line cross section is indicated by Exhibit 54-R, by B-Prime.

Q. This Exhibit 87, the large map on the wall, did you prepare that?

A. It was prepared under my supervision.

Q. What does that purport to represent?

A. Exhibit 87 is a map of the common source of supply in the Medrano formation, which has heretofore designated as segment "C."

Q. In the West Cement field?

A. In the West Cement Field, and on this Exhibit the wells are shown which have been drilled to the Medrano sand, also below the well location is indicated the top of the Medrano sand. The contour lines represent the depth in sub-sea feet below which the level would,—for instance, minus 4000 feet on this Exhibit indicates that along that

line the Medrano formation in this common source of supply would be found at a depth of 4000 feet below the level. In addition the map shows the wells which are drilled to the Medrano but failed to find the Medrano formation or Medrano sand because they drilled off pattern or through impermeable —— between the Medrano sand on the one side of the fault and the Medrano sand on the [fol. 1253] other side of the fault. The red fault lines show a definite obstruction between the common source of supply North of the Sterba fault and another common source of supply South of the Hartshorne fault.

Mr. Adams: I will offer in evidence Exhibits 83, 84, 85, 86 and 87, both inclusive.

Chairman Bond: Received.

Q. Would you care to put these Exhibits on the blackboard and illustrate from them further?

A. Well,——

Q. While you are putting them on the board, the area marked in red on Exhibit 83 to 86 illustrates what?

A. The Medrano sand.

Q. The cross section lines which you have referred to and marked on 54-R as A-A-Prime, B-B-Prime and C-C-Prime, are those red lines or streaks on Exhibit 87, the large map?

A. Yes, sir, they are.

Q. Now, how does it happen that you picked those particular wells from which to run that cross section, your cross section lines?

A. The reason for taking those wells was to determine the faulty condition on both sides of segment "C," because the Palmer Oil Corporation owns the South half of the Southwest Quarter of Section 35-6N-10W and under the South half of the Southwest Quarter of Section 35 is very prolific oil sand.

[fol. 1254] Q. In the Medrano section?

A. In the Medrano section of the West Cement field.

Q. Those cross sections show the extension of the red colored oil zone and they show breaks or disruptions in the extension,—will you explain that to the Commission?

A. The cross section "A"-A-Prime that runs from the

Phillips-Garn No. 5 South to the Phillips-Margaret No. 1, the bore hole of the Phillips-Garn is indicated by a black line,—the top is indicated and the base is indicated. The next well immediately South of the Phillips-5 is the Phillips-Dixon No. 4,—that is indicated in A-A-Prime and the base is shown and the top is shown.

It will be noted in the part of the field in segment "B" of the Medrano formation these wells are approximately the same sub-sea depth. Going South the formation dips at a rather steep decline. The next well to the South is the Palmer-Sterba No. 5. That is indicated by a black shaft going down and then another line, a dashed line at one angle is shown.

Q. Is shown on what?

A. On Exhibit 83.

Q. Okay.

A. And the dashed line at the angle indicates a trace of the fault plane of the field which has been designated as the Sterba fault. It will be seen from this Exhibit that [fol. 1255] there is considerable distance between the base of the Medrano on the North side of the fault and the top of the Medrano on the South side of the fault.

Q. What do you mean by "considerable distance"?

A. The total distance is from sub-sea depth minus 3470 feet to 3960 feet, or 590 feet.

Q. The same facts that are shown on Exhibit 83 are reflected on proponent's Exhibit 54-R, are they not?

A. Yes.

Q. Only the size of this map is such that it is hard to discern, is that a fact?

A. The representations on Exhibit 83 is the graphis way of showing the same information as on Exhibit 54.

Q. But instead of only the geologist being able to understand the top and bottom of the cross section such as is shown on Exhibit 83, it then becomes a common problem that a layman or anybody could understand, that there is 500 feet of impervious formation between the base of the Medrano on one side, and the top of the Medrano on the other side?

A. That is clearly indicated.

Q. And by placing it on the cross section, you don't need

a geologist, anybody can see that there is a common source of supply on either side of the fault, completely separated?

A. Completely separated.

Q. Will you look at Exhibit 84 and explain that to the Commission?

[fol. 1256] A. Exhibit 84 shows the same along the line marked as C-C-Prime on Exhibit 54-R, and roughed from the Phillips-Oaks No. 4, East to the Palmer-Sterba No. 6, East to the Magnolia-Cement-Henley No. 5, East to the Magnolia-Medrano No. 6, and finally to the Magnolia-Lindsay No. 10. The same method was used as in preparing Exhibit 84 as was used in preparing Exhibit 83, the top of the Medrano formation at the wells shown is indicated and the base and the top of the formation is indicated by the red color. The first place, Phillips-Oaks No. 4 is shown by black shaft and indicates the top and base of the Medrano. The next well is the Palmer-Gulf-Sterba No. 6, a black shaft which completely misses the Medrano formation on either the North side or the South side of the fault plane, is shown by a dashed line. That is the Sterba fault, as indicated on Exhibit 54-R. It will be noted that on this Exhibit not only is there considerable distance between the top of the Medrano formation South of the fault and the base North of the fault, it is a distance of 200 feet but in addition to that there is a difference of the thickness of the zone North of the fault and South of the fault. Going East along the same line the next well is the Magnolia-Cement-Henley No. 5. The next well is the discovery well of the pool, the Magnolia-Medrano No. 6. This is the well to which I referred, that upped the hole in the shallow zone or extension of the field. These faults are all local and only cut one formation,—they go upward [fol. 1257] and downward. The extension of the Hartshorne fault upward there is an indication of the fault in the upper part of the shallow zone in No. 6. That is indicated in the bore hole of the No. 6 Medrano. The Magnolia-Lindsay No. 10 is the next well, shown by a black shaft. In the drilling of this well, in the discovery gas well in the Medrano field or in the West Medrano Cement field they failed to encounter any Medrano sand.

[fol. 1258] (Mr. Keplinger is on the stand and is being examined by Mr. Adams.)

A. (continued) so that in this exhibit, the same information is shown on Exhibit 54-R as shown dimensionally in two determinations so that it is possible to see breaks that exist in the formation.

Q. Technically, the information shown on Exhibit 54-R and that shown on Exhibit 83 to 86, that is the same, is that correct?

A. Technically that is correct except in one instance at the top of the Medrano formation, the Palmer-Sterba No. 7 on Exhibit No. 85, there is a difference in the interpretation and we used the interpretation in this of the geologists on the well.

Q. Referring to Exhibit No. 85, will you explain that exhibit?

A. Exhibit 85 is a cross-section, D-D' as indicated on Exhibit 54-R, it starts in Phillips-Oaks No. 3 and has black shaft and at the top and the bottom of the Medrano formation, and the next well is Oaks No. 2 and black shaft as indicated, now before we go to the next well, going eastward, No. 2.

Q. Oaks No. 2?

A. Oaks No. 2, you cross the Sterba fault and that is indicated by a dash black line on the north side of the fault, the interpretation is indicated on the south side of the Medrano or Medrano is indicated and it shows a complete break in the Medrano sand across the Sterba fault.

Q. When you say a "complete break," you mean that there is something between the sand on one side and the sand on the other side?

[fol. 1259] A. Yes, the Medrano exists on one side and failed to exist on the south side by impervious zone.

Q. All right, go ahead.

A. The next well is the Palmer-Sterba No. 7, shown by a black shaft and top and bottom of the Medrano sand is indicated and the top is used in Exhibit 85 as the top of the Medrano, as indicated on the exhibits made by Mr. McKee which indicates the top as minus 43593. The next

well shaft is that of Palmer-Sterba No. 4 indicating the top and base of the Medrano.

Q. Are you going to eastward across the exhibit?

A. Yes, sir, and next going eastward is Pierson No. 1, that is the discovery well in the oil section of the Medrano formation in Segment C. Anderson-Prichard-Ramsey A No. 1 is the next well to the east and next eastward is the Magnolia Medrano No. 11, then no well on across the fault, but that is indicated by the fault by the dashed line that indicates a fault trace by the Hartshorn fault, going east to the Lindsey No. 12, the last well on the cross section, the fault to the east of Lindsey No. 12 is indicated by a dashed line.

Q. Take the last exhibit, Exhibit No. 86, and explain what that represents.

A. There is a line of wells shown on Exhibit 54-R as B-B', the first well is the Phillips-Oaks No. 1 shown by black shaft, the same information is shown on the other [fol. 1260] exhibit as indicated by Exhibit 86. In the top and bottom of the sand is shown by the respective wells on the other exhibits as indicated by this exhibit, the main feature is Magnolia-Henley No. 2 has a black shaft and is indicated as drilled and found in the Medrano sand. The Medrano formation indicated north of the fault and west is some 150 feet above the top of the Medrano formation, south and east of the Sterba fault.

Q. Now, Mr. Keplinger, have you made an examination of the other faults in the Medrano area in the West Cement field to determine whether or not, in your opinion, they exist?

A. I have.

Q. What did you find from which you might form a conclusion as to the existence of the remaining fault lines that are shown on Exhibit 54-R.

A. The conclusion is, that by making similar cross-sections there, are shown on Exhibits 83-86, that the faults exist and are at the approximate locations as indicated on Exhibit 54-R; there is one possible exception and that is that there may be an additional in the northwest section of the West Cement field.

Q. You say that there may be, you mean that there

hasn't been sufficient development of that area to determine that?

A. Yes, there are very few wells up there, but the information that we were able to obtain indicates that there may be an additional fault that cuts off the northwest portion of the pool as another common source of supply.

[fol. 1261] Q. What is that information, Mr. Keplinger?

A. That information was obtained in the Gulf-Pell No. 1. The formation up to the hole at above the Medrano formation or above the Medrano sand in this particular well showed a faulted condition, it is approximately a 90 foot fault shortening of the section at a depth of approximately 4500 feet which indicates additional, Gulf-Pell located in the southwest ¼ section 28 and in the shallower zone, there is indicated a fault, a faulty condition around 4500 feet so that it's possible that there will be, maybe a fault running across the northwest part of the West Cement field that would——

Q. Insofar as the Medrano sand is concerned?

A. Yes, and some of the upper horizons above the Medrano and I could indicate that by a letter "X" on this map.

Q. Well, there aren't really any known facts to establish that fault at this time, are there?

A. Except that right above Medrano.

Q. It's just an indication?

A. Yes, it's just an indication.

Q. While, with respect to other faults, there are known facts?

A. That is right.

Q. Now going back to Segment C is there in your opinion any positive or actual control to establish the water level?

A. In Segment C?

[fol. 1262] Q. In Segment C.

A. The only positive evidence is the Phillips-Margaret No. 1 well located in the northwest ¼ section of 5N-10W.

Q. Does the evidence, as appears from that well, conform to the water level shown on Exhibit 54-R?

A. It does not.

Q. What does Exhibit 54-R show as a water level on Segment C?

A. Minus 4741 feet.

Q. Then where is the water level encountered in the Phillips Margaret well?

A. The base of the Medrano formation in the Phillips-Margaret No. 1 was encountered at minus 4651 ft. The well was completed in 1943 and did not make water at that time, however, subsequent to the completion date, the well had started making water so that it is someplace, the position of the water level is somewhere below 4615 feet and there are no other wells in this common source of supply.

Q. In Segment C?

A. Segment C, which you have made water.

Q. So actually there isn't any positive information acquired by drilling to establish the contact, oil-watercontact in Segment C?

A. That is correct.

Q. So as to say that line as shown on Exhibit 54-R is correct or isn't correct, no one knows, is that right?

A. That is correct.

[fol. 1263] Q. It's pure guess, isn't it?

A. It's an interpretation.

Q. Now, referring to the water levels in Segment D and E, as shown on Exhibit 54-R, is that substantially different, is there a substantial difference in these water levels?

A. There is.

Q. Tell how substantial a difference is there.

A. In Segment D the water level is 4465 feet as indicated on Exhibit 54-R.

Q. Is that a minus depth?

A. Yes, sir, and that has been confirmed by the drilling of wells along the edge of Segment E. In Segment D the water level is shown on Exhibit 54-R as 4741 feet. The controlling well is the Amerada-Hartshorn No. 2.

Q. Again, is that a minus depth?

A. Yes, in my interpretation, the water level in Segment D should be somewhat higher by the difference between Segment E water level and Segment D water level as shown on Exhibit 54-R as a matter of some 200 feet——

Q. Well, something over 200 feet?

A. Yes, sir.

Q. You have had occasion, have you, to review proponent's exhibit 72, the iso-baric map that is on the board?

A. Yes, sir.

[fol. 1264] Q. Now, that represents bottom-hole pressures, does it, taken in November, 1945, is that what is purports to represent?

A. Yes, sir.

Q. Will you explain to the commission wherein it is a fact that maps illustrates the existence of impervious faults or barrier as between the various Segments A, B, C, D and E?

A. Starting with Segment C?

Q. Start where you want to.

A. The pressures taken in November, 1945, are shown on the map below the well locations and the contours of the variations, no pressure within the Segment C has been indicated, and going southward to Segment B the same information is indicated in the contours showing the pressure interpretation over the pressure at the various points in Segments are shown by me, it's——

Q. Now, does that cover the gas zones in the various segments as well as the oil zone in the Medrano section?

A. That is the Medrano sand, including both oil and gas.

Q. And does it show wide variations of the points on either side of the fault lines?

A. Yes, sir, between Segment E and Segment D there are variations in the pressure which should only be possible if that were the barrier that exists there.

Q. Would you say that the variations which in pressure existed on either side of the fault line, that they were [fol. 1265] exact if there was communication within that field?

A. If there were communications you would not have the variation. The variations exist, this is a map of November, 1945, throughout the entire pressure history of the pool, various pressures have indicated the same non-communicative quality between the various sides.

Q. You have checked the pressures that exist in the various segments reflected on Exhibit 72?

A. No, and there has been no bottom-hole pressures field-wide, between pressures since this exhibit.

Q. Now, you note in Segment B you showed some variations of pressures within that particular segment around Phillips-Oaks No. 2 and Phillips-Oaks No. 3, which—will you explained that to the Commission—what occasions that?

A. Phillips-Oaks 2 and 3 are oil wells and on this exhibit it indicated that they had pressures of 512 pounds and 429 pounds at the date of the pressure survey in 1945, the interpretation of these pressure is that it was a low pressure area, the wells around there, the wells have depleted the formation and dropped the initial pressure and sand, these wells are not even as high producing, do not have high producing ability as some of the other wells in the pool, and it may be if given a longer period of time for pressures to build up that pressure will build up comparable to Phillips-Oaks No. 4.

[fol. 1266] Q. Now, going up in Segment B, up in the gas zones, did you find two wells that we will say had 650 feet or 650 feet apart.

A. Yes.

Q. What are these two wells?

A. Here are the Margaret Sames No. 6 located in the northeast quarter section of 35 and Magnolia-Miles No. 10 located in the northwest quarter of section 36.

Q. And what does the map reflect as to the pressures of these two wells?

A. Sames No. 6 had 904 pounds and Miles No. 10 had 892 pounds.

Q. Or a difference of how much?

A. 12 pounds.

Q. Now, is there another well in the gas section across the Sterba fault from these two wells there you just mentioned, that drill approximately 650 feet from these wells (indicating).

A. Yes.

Q. What is that well?

A. The Magnolia Medrano No. 7.

Q. And what does the map show the pressure of that well is.

A. The map shows the pressure to be 920 pounds.

Q. And what is the difference in the pressure of that well from the two wells across the Sterba fault?

A. The well immediately to the north, the pressure difference is 28 pounds and to the northwest the pressure is 16 pounds difference.

[fol. 1267] Q. The well furtherest away from it?

A. 16 pounds difference.

Q. It is more nearly the same pressure in this pressure differential, isn't it or is it not reflected on either side of the various fault lines as shown on Exhibit 72.

A. It is, it is a difference of pressure across the Sherritt fault, it is a difference of 900 pounds to 1200 pounds as indicated there, is 300 pounds, the same applies to the Hartshorn fault and Sterba fault, the difference in pressure and to the Edwards fault.

[fol. 1268] Q. Does the map shown any uniformity, show anything or reflect any uniformity of pressures where you take the pressure on the Isobar on one side of the fault and where you take the pressure on Isobar on the other side of the fault line?

A. They do not.

Q. Now, until we find the Exhibit number, Mr. Keplinger, will you refer to the Engineer's Report that has been offered here in evidence by the Proponents' Engineers?

A. Yes.

Q. Table 9, Line 6 of that Report, please,—explain, if you will, what, if anything is there reflected as bearing on whether or not the fault lines between the various segments in the Medrano area of the West Cement field constitute an impervious barrier, constitute impervious barriers?

A. Item No. 6 is the reservoir pressure and gas-oil contact at sub-zero at the time of oil discovery, which was in March, 1943. At that time, according to the Engineer's Report, Table 9, the reservoir pressure at the gas-oil contact in segment "A" is indicated at 1927 pounds,—in segment "B" at 1142 pounds,—as to segments "D" and "C", segment "C" 1750 pounds and segment "D" 2000 pounds,—segment "E" [illegible] pounds.

Q. Now, segment "B" was one in which there has been a substantial gas withdrawal before the oil was discovered in that segment, is that correct?

A. That's correct.

[fol. 1269] Q. And if I read these items in the Engineer's report correctly, there was almost a hundred pounds difference in the pressure in the Medrano sand horizon between segment "A" and segment "B" and about six hundred pounds difference in pressure between segment "B" and segment "C"?

A. That's correct.

Q. And about two hundred fifty pounds difference in segment "C" and segment "D"?

A. That's correct.

Q. Is that the way you interpret this?

A. Yes, I might add that in segment "A" at that time, there was only one well producing.

Q. Oil or gas?

A. Gas well, and it had lots of pressure,—1927 pounds average at the gas-oil contact.

Q. If there was communications there through the Sterba fault or through the Sherritt fault, wouldn't the difference in pressure have been compensated by gas blowing from one segment to the other where there was a difference of pressures such as here indicated?

A. Yes, there should have been compensation. You can get one-half to three-fourths, you can go one-half to three-fourths of a mile in segment "B" between wells, but if you go a shorter distance such as between the Phillips-Fletcher No. 5 and the Stephens-Wilhite No. 3 you would [fol. 1270] have a great difference in pressure because of the fault. In segment "D" on East it is noted that these pressure were 2000 pounds? At the time of the oil discovery there had been no wells there drilled that had,—no well drilled in these respective segments.

Q. Either gas or oil?

A. That's correct.

Q. Now, refer to the Table 9 again, in the Engineer's Report, concerning which our discussion has just been on Line 6,—refer to line 13 in this Table, and explain what that means and the difference between the segments there reflected?

A. Item No. 13, which is the oil extension factor at the time of oil discovery,—that is the volume of reservoir oil

phase derived from one volume of stock-tank oil,—it means that more than one barrel of oil in the reservoir is required to equal,—with dissolved gas, is required to equal one barrel of stock-tank oil. This Table indicates that in segment "A" the oil extension factor is 1.160,—which is that one barrel of stock-tank oil in the reservoir will,—would, at the time of oil discovery be equivalent to 1.16 barrels of oil in the reservoir, because it would have contained in it the dissolved gas. I wonder if you would refer to the item which shows how many cubic feet of gas would be dissolved in each barrel of oil in place in segment "A".

Q. And then explain the same item with respect to the other segments?

[fol. 1271] A. In segment "A" item 9 in Table 9 is the gas in solution at mid-point in the oil showing at the time of the oil discovery. That volume of gas is 412 cu. ft. per barrel. Now, going to segment "B" the oil extension factor is much smaller than in segment "A",—it is 1.109.

Q. Which means what?

A. Which means that it has less gas dissolved in a barrel of oil and, going to Item 9, the gas in solution at mid-point is indicated at 260 cu. ft. per barrel.

Q. The significance of this data are if there had been communication there would not have been a difference in the oil extension factor?

A. That's right, there wouldn't be that difference in the oil extension factor.

Q. All right, go ahead with segment "C".

A. In segment "C" the oil extension factor at the time of oil discovery was 1.149, with gas at mid-zone indicated at 377 cu. ft. per barrel. This is a higher pressure area than the oil extension factor is larger than in segment "B".

In segment "D" the oil extension factor is 1.165, with indicated gas in solution at this point of 427 cu. ft. per barrel. There has been no development in this zone there in that gas-oil portion at the time of the discovery of oil.

In segment "E" the oil extension factor at the time of the discovery was 1.161, with gas in solution at mid-point [fol. 1272] or mid-zone 415 cu. ft. per barrel.

Q. Now, bearing in mind that in segment "D" and "E" the pressure reservoir, the reservoir pressure at the time

oil was first discovered was,—bearing in mind that the gas-oil contact was 2000 pounds,—and in other words it was equal?. Now, if segment "D" lies between segment "E" and segment "C" how can you explain that there is more cu. ft. of gas in solution per barrel of oil in segment "D" than there was in solution per barrel of oil in segment "E" at the time oil was first discovered?

A. At this point in the oil zone, mid-point in the oil zone in segment "D" and also higher than the mid-point zone in segment "E", which will have a little lower pressure than in segment "D",—well; the higher the pressure the more gas will dissolve in a barrel of oil and in this case it was between 427 and 415 pounds.

Q. Now, if there had been communication through the Edwards fault and the Hartshorne fault, would there have been this variation in the amount of pressure in the various segments?

A. No, if there had been communication across the Hartshorne fault the pressures would have dropped and the gas in solution at mid-point in the oil zone in this well would have been lower. The pressure history in the first well in segment "D" in the oil zone indicated that it had almost the same pressure indicated on the other side of the fault.

[fol. 1273] Q. This Engineer's Report to which we have been referring, I believe has been identified as Exhibit 71, —now, referring to Line, 18, in Table 9 of Exhibit 71, I would like for you to explain the variations shown between segments "A", "B", "C", "D" and "E" here involved?

A. Item No. 18 is the percentage of total pore volume occupied by oil at the time of oil discovery, in the first part of 1943. In segment "A" it is indicated that the percent of pore volume occupied by oil was 78.87. If there had been no production in this segment, such as gas as was produced in the Wilhite No. 3 the factor would have been 80, which is the highest percentage that you can have. The other 20 percent going to make up 100 per cent is filled with interstitial water, as indicated by line 16.

Then, going to segment "B", the percent of total pore volume occupied by oil is 56.05, a considerable difference between the same figure for segment "A".

Q. You don't mean the same figure,—you mean the same item?

A. Yes, the same item, sorry.

Q. Go ahead.

A. In segment "C" the pore volume occupied by oil is 75.52. In segment "D" it is 80 and the same for segment "E", 80.

Q. And your experience and knowledge and from your study of this area, what does this difference in the percentage of total pore volume occupy by oil in these various segments mean,—how do you interpret that, sir?

[fol. 1274] A. The interpretation is that referring to Exhibit 54-R the Hartshorne fault is indicated in segment "D", the factor was 80,—in segment "C" the factor was 75.52. If the production of gas in segment "C", which had been going on ever since the discovery of gas in the Medrano formation of the West Cement field was effective the pressure in segment "D", that is, the present volume of pore space occupied by oil would have decreased,—it wouldn't have been 80, it would have been a lower figure.

Q. In what segment would it have decreased?

A. In segment "A", it would not have been 80.

Q. Is a decrease of approximately 5% in pore space occupied by oil,—is that recorded by you as a substantial or an immaterial decrease?

A. It is a material decrease, in that it indicates that in segment "C" only 75% of the pore space is occupied by oil. In segment "D" 80% of the pore space if occupied by oil at the time of oil discovery in the West Cement field.

Q. Going across from segment "D" to segment "B", across the Sterba fault, is the difference still greater, as it was between segment "C" and "D"?

A. Yes.

Q. You find there was substantial difference, is that right?

A. Yes, in segment "B", the percent of pore space filled by oil was only 56.05 per cent, in comparison with approxi- [fol. 1275] mately 75 per cent for segment "C" and a large volume of gas taken out of segment "B" did not effect the pressures or the tabulations in segment "C" and in-

dicates that the Sterba fault is a barrier, an impenetrable barrier between segment "B" and segment "C".

Q. Now, will you refer to Tables 1, 2, 3, 4 and 5, in Exhibit 71 and explain the comparative importance of the facts disclosed by such tables, I mean whether or not these fault lines do constitute an impervious barrier between the segments?

A. Figure 1 on Exhibit 71 is a bottom hole pressure versus pore, one is the bottom hole pressure versus pore volume,—cumulative recovery percent. This is for segment "A". The pressure history is indicated, as indicated within the bottom hole pressure in pounds per square inch absolute is indicated and it will be in that the pressure drops from approximately 2040 pounds to a point where there is three divergent curves. The bottom curve is—— it is indicated that the cumulative recovery will be approximately 10½ percent of the total pore volume. The recovery of oil from segment "A", based on the interpretation of the pressure data is that 19½ percent of the oil in the total pool pore space will be recovered. In segment "B" the same information is shown, but segment "B", the end result is that the cumulative recovery percent of total pore volume to be, rather the total pore volume at depletion is indicated at approximately 9½—no, I mean 8, [fol. 1276] or a little better than 8½ percent. Comparing figure 1 and figure 2, the recovery with the gas cap producing, shows a very wide variation, in one case 19½ percent while in the other case it is a little over 8½ percent.

[fols. 1277-1278] (Mr. Keplinger is still on the stand, being examined by Mr. Adams.)

A. (continuation) If there were communications between Segments A and B.

Q. In the Medrano sand of the West Cement field?

A. There would be no wide variation, we anticipate a percentage of total oil recovery.

Commissioner Jones: The Commission will recess for five minutes.

[fol. 1279] Commissioner Jones: Gentlemen, you may proceed.

Mr. Keplinger recalled to the stand.

Witness examined by Mr. Adams:

Q. Continue with your testimony.

A. Segment C the bottom hole pressure performance versus accumulative recovery expressed as a per cent of the total poor volume as shown in Figure 3 of Exhibit 71. This exhibit is similar to previous figures 1 and 2 and indicates that the recovery with the gas cap producing for these segments will be 18 per cent. Now, in comparison to a little bit, add 8½ per cent for Segment B, it shows the performance of the bottom-hole pressure in these two segments as entirely different and indicates the segments are separated by impervious formation that would not lead themselves to indications of fluid.

Q. By that do you mean the Sterba fault?

A. Yes, sir.

Q. Now, referring to Table No. 7 and Exhibit 71 and explain the effect of the data there shown on the question of whether or not the Segments A, B, C and D are separated by impervious faults.

A. Table No. 7 of Exhibit 71 is the bottom hole pressures which have been predicted for the respective segments in the Medrano sand of the West Cement field. Segment A, after the injection of gas, it's indicated that the pressure [fol. 1280] of this segment during the first year declining to 1490 pounds, in the beginning 1500 pounds; in this segment it was noted at the beginning the pressure was 880 pounds, 620 pounds lower than the average bottom-hole pressure. It's 622 pounds lower than Segment A and the bottom hole pressure at the first year had declined to 665 pounds and Segment C bottom-hole pressure 1150 pounds, or some 270 pounds higher than in Segment B adjacent to this after the first year, during the first year the bottom-hole pressure will decline to 1140 pounds. Segment D indicated to be 1250 pounds bottom hole pressure will decline to 1225 pounds. Segment E, the bottom hole pressure at the beginning was 1440 pounds, will decline to 1400 pounds.

Q. In the first year?

A. Yes. Looking at the picture of the second year, third year and fourth year, show according to Table 7, the respective segments all of different pressures in the future

and these areas are segments in order to operate as such and under such pressures have to be separate common sources of supply.

Q. Have you studied the proposed plan of unitization for the Medrano sand in the five segments here involved as proposed by the proponents?

A. I don't believe I have.

Q. The proposed plan of unitization.

A. I have studied the bottom hole pressures and proposed unitization as indicated in the engineers report that they [fol. 1281] would operate the various segments as separate entities.

Q. To refresh your recollection, do you recall that a part of the proponents plan of unitization was to give the leases in Segment E twice the amount of income for the first five years for the operation and then to make up for that over-payment in the next five years?

A. Yes, that is an acceleration factor indicated in the plans of unitization.

Q. That is the plan I speak of.

A. I see.

Q. You have reviewed that?

A. Yes.

Q. And then looking again at Table 7 in Exhibit 71, you will observe that it's only proposed in Exhibit 71 to have gas injection for nine years at the end of which time the pressure wells have dropped to four hundred pounds and that that area isn't expected to have any remaining bottom hole pressure at the end of about 13 years.

A. That is correct.

Q. Now, from all the factors which you have discussed so far in your testimony, have you formed an opinion as to whether or not in Segment C is clearly a separate source of supply in the Medrano gas and oil section?

A. I have.

[fol. 1282] Q. And will you again state what that opinion is?

A. My opinion is that Segment C of the West Cement field in the Medrano section is a common source of supply and the production performance and the geological data obtained both in this segment and in the adjacent segments

show Segment C to be separate and to constitute a single common source of supply.

Q. Now, you have endeavored to illustrate that by your Exhibit 87, is that correct?

A. Yes, sir.

Q. There is a question mark on the northeast outside boundary of Segment B as shown on Exhibit 87, will you explain what the question mark is?

A. The question indicates that I am not entirely sure as to the eastern limits of the common source of supply. That line might be a little bit to the west or a little bit to the east but the line itself is based on the Corporation Commission's order dated April 10, 1947, Order No. 17,736 and that is the reason for the question mark. There is a little question as to whether it could be a little to the east or to the west, that we made it there because the Commission had established that line.

Q. Assuming that Segment C, insofar as the Medrano sand is concerned, constitutes a separate single common source of supply of oil and gas, have you made a computation of the portion of the oil and gas bearing sand within [fol. 1283] such segment which is owned by the Palmer Oil Corporation?

A. I have.

[fol. 1284] Q. What percent of the Medrano oil and gas section area within segment "C" is owned by the Palmer Oil Corporation?

A. The value of the oil and gas within this segment, that is credited to the Palmer Oil Corporation, is approximately 22 percent.

Q. In making that computation what basis of factors do you use,—do you use the same method of computation as has been followed here by proponents in their computation of equities?

A. I do.

Q. So, that, if we are correct about segment "C" being a separate common source of supply of oil and gas from the Medrano section, then the Palmer Oil Company would have in excess of 22 percent of the equities within such source,—is that what I understand you to *say*?

A. That's correct.

Q. Did you make a computation in that same regard in respect to the area,—I am not speaking of the equities, I am speaking of area within segment "C"?

A. Yes, the oil portion and the gas portion.

Q. Will you state what percent of the area was in segment "C" is owned by the Palmer Oil Corporation?

A. Based on the area which would be productive of oil and which would be drilled under normal conditions, the Palmer Oil Corporation would be expected to have about 40 percent of the value of the area.

[fol. 1285] Q. You mean of the area within segment "C"?

A. The area within segment "C."

Q. Now, Mr. Keplinger, you have heard all of the testimony concerning the method of production which might be considered as being had on a competitive basis in this general area in which these five segments are located, and also that which might be expected in the proposed Unit Plan is adopted,—from your study of this area have you formed a conclusion or opinion as to how this Medrano sand area should be developed for the adequate protection under conservation, conservative methods, to obtain the greatest amount of oil?

A. I have, yes.

Q. What method of development, first as to well spacing, do you think should be adopted?

A. Well, well spacing, 10 to 20 acres, depending upon conditions.

Q. Well, what do you mean depending upon conditions, depending on the locality of a well?

A. Yes, the locality and the type of formation to be encountered where the wells are to be drilled.

Q. Where, in respect to the structure itself, should such wells be drilled, up structure or down structure?

A. They should be drilled in the oil bearing portions, down structure.

Q. Now, assuming that it would be proper,—let me with-
[fol. 1286] draw that question,—do you have an opinion as to whether or not this Medrano sand section in this area is at this time, has at this time been properly developed?

A. I have.

Q. Will you state what your opinion is?

A. I think——

Mr. Williams: Object, as incompetent, irrelevant and immaterial,—I don't see that that has any bearing on what would occur under Unitization.

Chairman Bond: The Commission agrees with you, but we are going to let him answer the question.

Mr. Adams: My question is probably not understood,—I had reference to well spacing.

Chairman Bond: Well, if the Commission is not properly doing it, we want to correct it, and if our officers are misleading the Commission we want to know that.

Mr. Adams: We think under the present spacing, 20-acre spacing in this particular pool,—if the Commission please, Mr. Montgomery stated it should be 20 acres or less.

Chairman Bond: Well, if you don't want him to answer it, all right.

Mr. Adams: I do want him to answer it.

[fol. 1287] Chairman Bond: Well, the Commission is doing what they are doing upon information furnished by their employees and with the recommendation of our Officials.

Mr. Adams: Well, if the Commission please, perhaps I should change my question to say——

Chairman Bond: You may change it if you like.

Q. Do you have an opinion as to whether or not the Medrano section in this area has been adequately developed by the drilling of wells?

A. In answer to your question whether the Medrano sand has had adequate development, I will explain that in this way,—development means oil production and it means will additional wells be required to fully exploit the oil and gas in this reservoir.

Q. Yes, that's what I mean.

A. There will be need for additional wells to be drilled in the West Cement field in the Medrano section.

Q. Now, in the location of these wells and in the determining of how close they should be spaced, what factors, in your opinion should be taken into consideration?

A. The factors of position on structure, the thickness of the producing formation, the quality of the sand which is being exploited, that is whether it is real good oil saturated oil sand or pore-type sand, and I believe that's about——

[fol. 1288] Q. Is there such uniformity in the elements you have just mentioned in these various segments, or will it vary as to segments?

A. The qualities which I have mentioned vary between segments.

Q. So in one segment 10-acre spacing might be right, and in another different spacing,—is that the way I understand you?

A. That is correct.

Q. Now, do you have an opinion as to what portion of the recoverable oil from the Medrano sand in this area might be recovered by normal operations, assuming that a gas-oil ratio is maintained as now fixed by the State Corporation Commission?

A. The present gas-oil ratio for the West Cement field is 3000 cu. ft. per barrel of oil and has some effect on future operations, which would result in producing this field, however the order for the gas wells in the pool change during the month of July,—a little over 4,000,000 cu. ft. per day for the entire area would have a much greater effect on the future operation——

Q. Well,—let me reframe my question,—assuming the gas allowable for this area was maintained on the same proportionate basis with oil production as now exists, then, do you have an opinion as to what percent of total recoverable oil from the Medrano section in the West Cement field might be procured by normal operations?

[fol. 1289] A. Yes.

Q. Will you state what your opinion is in that regard?

A. Well, the West Cement Medrano field, with the restriction in gas approximately 4,000,000 cu. ft. per day from the gas area the pressures will be maintained and that will be equivalent to partially closing in the gas-cap because the withdrawals will be compared to the large gas reserve contained in the reservoir and on the basis of indicated gas reserve the allowable, of some 4,000,000 cu. ft. per day, the gas-cap area would not be depleted for many years,—in the neighborhood of twenty-five or thirty years and that maintain the pressure in the gas-cap area and maintain the pressure in the gas-cap area,—the maintaining of pressure in the gas-cap area would act as an energy factor for in-

creasing the ultimate recovery of oil in the oil bearing portion of the field.

Q. I don't feel that you have answered the question, Mr. Keplinger,—I asked you what percent, in your opinion, of the total reservoir oil may be expected to be recovered by normal operations, which would necessitate, perhaps?

A. Yes, I have such an opinion,——

Q. Well, that's what I want you to tell the commission?

A. ——that recovery would be in the neighborhood of 450 or 500 barrels of oil per acre-foot.

Q. Considering the number of acre-feet in the Medrano [fol. 1290] section in this area, how would that compare with the estimated recovery from the proposed Unitization and Reinjection of Gas?

A. Well, it would be comparable, because, by maintaining the gas-cap and producing the allowable you have in effect maintenance of pressure in the reserve,—reservoir.

Q. And you would still permit each operator to produce his own tract, by that means?

A. That's correct.

Q. And still promote conservation?

A. That's correct.

Mr. Williams: I would like to hear the answer to Counsel's question,—what would be the percentage of recovery?

A. The percent of recovery, assuming that—well, the percent of recovery would be approximately 50 percent of the oil in place.

Q. Now, in respect to the proposed plan of unitization, in segment "C", if 10-acre spacing was adopted for wells in the oil zone in the Medrano section, how many wells would the Palmer Oil Corporation normally be expected to drill?

A. If that were done, by obtaining an exemption for the reason that completing the Sterba No. 7, which was drilled off pattern, the Palmer Oil Corporation, at regular 10-acre locations on the Sterba lease could drill six wells and encounter the top of the Medrano formation above 6000 feet. [fol. 1291] Q. Would Phillips Petroleum Company have more wells in that segment in the oil zone?

A. Yes.

Q. How many wells would Phillips Petroleum Company have if they were drilled about at similar locations in segment "C"?

A. They would have six.

Q. Who else, what other company would have wells in the oil zone in segment "C"?

A. The Stephens Petroleum Company would have an oil well.

Q. Would that be all of them?

A. Yes, at the present time there are two high gas-oil ratio oil wells, the Stephens Petroleum Company Pearson No. 1 and the Magnolia-Cement-Henley No. 5. Those wells have been getting,—they production declined on those wells has been quite rapid and they are getting the very high gas-oil ratio wells and their history will be similar to the Anderson-Prichard-Hays No. 1, which has been abandoned as an oil well.

Q. It is now a gas well?

A. It has been plugged. The entire horizon as to the Medrano sand is plugged off.

Q. Now, this gas field can be maintained by the reduction in the present production, by limiting production, could it not?

A. Yes, over a period of thirty years.

Q. I mean if the oil has been produced, all the recoverable oil, can the gas that has been maintained in the ground for pressure purposes, can it then be produced?

[fol. 1292] A. Yes, if the oil horizon has been depleted.

Q. Referring again to Exhibit 71,—do you have that in front of you there?

A. Yes.

Q. What percent of segment "A",—what percent of the total oil in place is attributed to segment "A"?

A. I'll have to calculate that,—in segment "A" it is indicated that the stock-tank oil in place at the time of oil discovery, Table 9, was 21.9 million barrels.

Q. And how many gas wells are there in segment "A"?

A. There is one gas well as a straight gas-oil ratio,—as a straight gas well, then there is one oil well which produces or has produced at a fairly high gas-oil ratio.

Q. Now, can you tell from that Exhibit what the estimate

is as to the recovery by gas injection from segment "A"?

A. Yes, the cumulative recovery percent of total pore volume, is indicated to be approximately 27 percent.

Q. Now, if you will refer to segment "B" and give us that information?

A. 27 percent is the total pore volume and the total pore volume is 32,400,000, so that the barrels of oil would be approximately 8,750,000 barrels.

Q. That's segment "A", isn't it?

A. Yes.

At this point the Commission recessed until 10:00 A.M. July 17, 1947, at which time the Commission reconvened [fol. 1293] and the hearing in this matter proceeded as follows:

[fol. 1294] July 17, 1947 at 10:00 o'clock a.m.

[fol. 1295] Chairman Bond: You may proceed, gentlemen, with C.D. 1308.

HENRY KEPLINGER recalled to the stand.

Witness examined by Mr. Adams:

Q. Mr. Keplinger, I hand you exhibit 1 in this case and ask you to review that briefly and state whether or not you have studied the proposed plan of unitization that constitutes a part of that exhibit.

A. I have.

Q. Referring to the structure of the Medrano horizon in the West Cement field, is it or is it not what might be termed a sharply dipping structure?

A. Several sharply dipping structures.

Q. And would the gas in the upper part of the various separate portions of the structure and the oil below, do you or do you not have a drainage down structure of the oil?

A. Yes, the production history indicates drainage of oil down structure.

Q. Accordingly, what leases in the various segments in

this area hold the most favorable position with respect to the possible recovery of oil?

A. The leases that are low in the respective structures.

Q. Is the Palmer-Sterba lease favorably situated with respect to production of oil on the structure in Segment C? [fol. 1296] A. In Segment C, it's favorably located.

Q. Because it's in the lower portion of the Medrano Structure location?

A. It's a small portion of the northeast part of Segment C and contains gas in the oil bearing sand of Segment C.

Q. Regarding the development that has been had in the Medrano oil in the various segments, is it or is it not true the Palmer-Sterba lease has been more nearly and more completely developed than any other lease within the area under discussion.

A. There may have been probably more wells drilled to exploit the Medrano formation on the Palmer-Sterba lease than on any similar lease in the pool.

Q. How many wells has the Palmer Oil Corporation drilled on that lease to get the Medrano sand, I mean to a depth to test the Medrano area?

A. There are five wells that have been drilled to sufficient deep tests to test the Medrano.

Q. Are there other locations on the Medrano area in Segment C that in your opinion should be drilled to completely determine the thickness and location of the oil bearing sand?

A. In Segment C?

Q. Yes, sir.

A. Yes.

Q. That as a matter of fact, isn't it true that the thickness and depths of the Medrano sand in Segment C has been [fol. 1297] more nearly ascertained by developments than by the other segments rather than by Segments A or B?

A. I would say that more nearly ascertainable than Segment A. But not necessarily Segment B.

Q. What about the lack of test wells in the northeast corner of Segment E.

A. Yes.

Q. Do you feel that there has been sufficient development of the southeast corner of Segment E wherein the correct

data could be obtained as to whether or not the production sand could be there located?

A. Yes, it will be advantageous to have additional wells in the southeast of Segment E to determine the productive sand.

Q. Does the proposed plan of unitization, in your opinion, give adequate credit to the Palmer-Sterba lease, assuming that in admitting the entire area covered by the five segments is the one common source of supply is in the locatio of the Medrano sand?

A. The Sterba lease has been located and I feel if situated that it would be obtained very favorable drainage and recovery and would be better than many other leases in the pool.

Q. Well, I don't—whether you completely answered my question. It may have been given more oil in place than other leases in the pool, but has it been given, under the proposed plan of unitization, in your opinion, adequate allocation of equity considering the location of sand also within the area?

[fol. 1298] A. It is not.

Q. Now, you say that there are other locations which, in your opinion, should be drilled on the Palmer-Sterba lease in order to determine correctly the depth and thickness of the Medrano oil sand, will you indicate where you think such locations should be made?

A. Only for the production of determining the thickness of the Medrano.

Q. And in order to procure the recovery of the highest production of recoverable oil after adding the last part, I will indicate the location on Exhibit 87, I have located locations A, B, C, and D.

A. These are locations that could be drilled and would encounter the top of the Medrano sand above the depth of 6000 feet, the rules and regulations of the Corporation Commission are that wells must be 600 feet apart, there would have to be an exception there for Number 7 which was moved down west from 6 where the Medrano sand was missed due to drilling the fault, and these locations were necessarily obtained the exceptions for No. 7 wells.

Q. The locations that you marked on the Exhibit with

the exception that you referred to, what constitutes, what is ordinarily considered as 10-acre locations.

A. It would.

Q. Would the present development of the Palmer-Sterba lease, and assuming that the unit plan did propose was [fol. 1299] placed in operation without any gas injections, but merely by selective production, how long would it take the Palmer-Sterba lease to produce the amount of oil to which it has been allocated?

A. Based on the allocations, the Palmer-Sterba lease, as indicated on Exhibit 53, was allocated 730,500 barrels and on the basis of the present allowable of 200 barrels per day per well, four wells per day, it would take only 12 years for these leases to produce all of the oil that has been allocated in Exhibit 53.

Q. Now, there might be a slight variation in that one way or another, as the result of the computation set forth in Exhibit 53-R?

A. No.

Q. Has there been any greater allocation in Exhibit 53-R to the Palmer-Sterba lease?

A. Yes, that is right.

Q. It might take just a little longer, but it is substantially the same?

A. Yes.

Q. In computing that allocation to the Palmer-Sterba lease which is pretty thoroughly developed, let's take the other leases in the proposed unit and I would like for you to state the allowable or rather the allocation set forth in the proposed execution of equities, the present production from the lease, and the approximate time under the selective production that it will take to produce such allocation, [fol. 1300] will you start in with the Amerada-Beamer lease, and give that data?

A. The Amerada-Beamer lease under Exhibit 53 has been granted a future production as of March 1, 1946 of 293,800 barrels and the estimated March production.

Q. March, what year?

A. For March, 1947 is 120 barrels.

Q. A day?

A. Per day.

Q. All right, go ahead.

A. The equivalent here at the present rate is 6.6 years. On the Amerada-Beamer during May of 1947 produced only 80 barrels per day instead of 120, as it did in March, 1947, and the production is declining. The Amerada-Edwards future as of March, 1946 is 1,220,900 barrels and was allowed 200 barrels per day in March, 1947 or the equivalent years of life are 16.8 years. The Amerada-Hartshorn was allocated 1,335,300 barrels, March daily capacity or allowable was 275 barrels. One well was making an allowable of 200 barrels set by the pool, No. 2 Hartshorn was producing at capacity, the future life as equivalent and producing at present rate is 13.3 years.

Q. Most of that oil, you say, will have to be produced from one well?

A. Yes, the Anderson Prichard Hays was allocated 215,300 barrels, that well has been plugged.

[fol. 1301] Q. Would you say that well there is one well on that lease?

A. That is right, it only produced 20,000 barrels and it was plugged, and the reason is that it went mostly to gas, the equivalent years of life at the present rate are—it will not produce 215,000 barrels of oil.

Q. It will not produce any more?

A. With the present development, Anderson-Prichard-Pickert, as of March, 1947, the production is 100 barrels.

Q. Per day?

A. Per day, and equivalent years of life at the present rate are 5.3 years. Prentice-A of Anderson Prichard was allocated 596,800 barrels as of March daily allowable, 400 barrels, the equivalent years of life at the present rate are 4.1 years. Anderson Prichard-Prentice B allocated 61,200. March estimate to make 30 barrels.

Q. Per day?

A. Per day. Equivalent life of 5.6 years, however the allowable on this well in July was only 3 barrels per day, for some reason the leases have shown very rapid decline, there may be some reconditioning indicated.

Q. In recovering the allocation?

A. Yes, the Anderson Prichard Walker allocated 390,900 barrels, in March 1947 the estimated daily capacity, 200

barrels, future life equivalent based on present rates, 5.4 years.

[fol. 1302] Q. Gulf-Pell?

A. That's estimated 947 capacity,—70 barrels.

Q. Per day?

A. Per day,—years of life of 40.5.

Q. You mean it is contemplated it will produce 40 and ½ years, under the proposed plan?

A. Also, assuming no decline in production, which is not a practical assumption.

Q. Gulf-Sherritt?

A. A daily capacity of allowable is 693 barrels?

Q. Per day you mean?

A. Per day,—the equivalent in years of life is 18.2 years, the estimated recoverable is 4,588,000 barrels.

Magnolia-Cement-Henley, allocated 501,000 barrels, estimated March 1947 daily capacity, 50 barrels per day,—the equivalent life is 27.5 years. This well, the only well on this lease, is at the present time producing at a very high gas-oil ratio. Magnolia-I Edwards,—725,900 barrels, 200 barrels per day in March, 1947,—equivalent to years, life at the present rate, 10.

Mr. Adams: There wouldn't be any difference, under Unitization?

A. This has nothing to do with Unitization,—this is at the present rate.

Mr. Adams: Mr. Williams, this shows you the alloca-
[fol. 1303] tions of the several leases in respect—

Mr. Williams: Under Unitization?

Mr. Adams: It doesn't matter about that.

Mr. Williams: You mean how long it would take to produce it from the individual property,—under Unitization it wouldn't be produced from the individual property.

Mr. Adams: Well, Mr. Kaveler testified that if the field was cut down so that only 5,000,000 cu. ft. of gas per day, that the same result would be obtained as by putting a cap on the gas. Under the present order of the Commission only 40,000,000 cu. ft. of gas is permitted to be taken by the,—from the reservoir per day.

Mr. Williams: Well, I can understand that, but I can't understand,—well, go ahead, you can't understand it for me.

Chairman Bond: Gentlemen, I'll tell you what the Commission is going to understand,—if we have Unitization the Commission is going to expect the royalty owners to get as much or more gas immediately and we'll expect you to produce this oil you are talking about.

Mr. Williams: We'll see that is done,—we'll see they get $1.00 while we get $7.00.

[fol. 1304] Chairman Bond: We want their checks to be greater and have them to continue coming to them.

Mr. Williams: There is no difference in the wishes of the Commission and the applicant in that case.

Mr. Adams: Mr. Keplinger, I've forgotten where——

A. Mary L. Edwards, is next. Allocation is of 3-1-46, 650,700 barrels, estimated March '47 daily capacity, 20 barrels.

Q. How much?

A. 20 barrels per day.

Q. All right.

A. Equivalent years of life at the present rate,—as compared with the other wells in the pool, the apparent inequities in the formula, gives this lease 90 years production at the present rate.

Q. In other words it would take 90 years, at the present rate, to recover the oil allocated to it?

A. Yes.

Q. Now go ahead.

A. Palmer-Sterba, 1,735,000 barrels, estimated daily production 400 barrels, equivalent years of life at the present rate would be 12 years. Both of these wells that you are producing on the Sterba lease are wells which make far in excess of the Corporation Commission present 200 barrels per day allowable.

[fol. 1305] Chairman Bond: You're testifying that under the present ruling of the Commission it would take 90 years to recover the oil and that it could be recovered in twelve years?

A. Yes.

Chairman Bond: Well, you didn't testify before this Commission before the Commission granted these allow-

ables, did you,—did you ever testify before this Commission that under the present allowables and that it could be produced in twelve?

A. No, I never have testified before the Corporation Commission on the Cement Medrano field.

Chairman Bond: You are going to testify now, how long it would take under this Unitization Plan, if it was adopted, are you?

A. No, I might explain it in this way,—that the allocation of oil with respect to the tracts out there was made and by making comparison of what the wells will do today, —in this particular case I have just mentioned the Mary L. Edwards lease,—I believe that is only making 20 barrels.

Chairman Bond: Well, you know how these allowables are made,—we hear the testifying,—the testimony before making the allowables and if there is any difference in your testimony in fixing allowables than which you testified about [fol. 1306] the Unitization the Commission would like to know why and wherefore.

Mr. Adams: If the Commission please, I might clarify that a little bit,—it's going to be our position that——

Chairman Bond: Have you ever appeared before the Commission on allowables?

Mr. Adams: No, I have not, Your Honor.

Chairman Bond: Has anybody ever appeared for your Company on allowable days?

Mr. Adams: No, I believe not, Your Honor.

Chairman Bond: Well, you know what's sauce for the goose is sauce for the gander, and you can't come in here and testify it would take 90 years under the present operations and twelve years would be sufficient to produce the field,—the Commission wants to know what it is doing and we want testimony to show the conditions.

Mr. Adams: That is the proposition that I might explain just a little bit, Your Honor. It is our opinion that this lease has an allocation far in excess of what it is entitled to have.

Chairman Bond: But this witness has testified that under the present allowable order of the Commission, it would take 90 years to produce it and twelve years by the other

[fol. 1307] method,—if we have ever had any such testimony, I don't remember it.

Mr. Adams: The reason for that is,—that the Commission allocates an amount of oil to that particular lease which is in excess, far in excess of what it should be allowed,—that's what we are trying to demonstrate to the Commission now.

Chairman Bond: I don't care what you are trying to demonstrate to the Commission now,—the Commission wants to know what the conditions are,—the witness says it will take ninety years, ninety some odd years under the present order of the Commission to produce one well and twelve to produce another.

Mr. Adams: Your Honor, that goes to the question of improper allocation of oil to this particular lease,—I think the Commission misunderstood me.

Chairman Bond: Well, you better get right because what is sauce for the goose is sauce for the gander and we're not going to take one line of testimony in fixing the allowables and another line in ruling on Unitization.

(Reporter's Note: Examination of witness resumed.)

Q. Mr. Keplinger, the allocation of the number of barrels of oil which you testified as having been allocated under [fol. 1308] the Plan to the various leases,—you are not telling the Commission that those leases have that number of barrels of oil, are you?

A. No sir.

Chairman Bond: The Commission is not interested in the amount of recoverable oil,—this witness testified that it would take ninety some odd years under the present order of the Commission to produce that oil.

By the witness:

A. I intended to say that it would take ninety years under the present order of the Commission to produce the oil which the Unit plan as of March 1, allocated to that lease and that the allocation of oil to the part,—that property is out of line,—not that the Commission's order was out of line.

Chairman Bond: Then you did not mean the allocation of the Commission.

By the Witness: No sir, it is the allocation under the Plan.

Chairman Bond: Well, you better correct your testimony.

Mr. Adams: I'm sorry,—I thought we had made that clear.

Chairman Bond: Your testimony is based on the allocation fixed by the Committee who drew this Plan.

The Witness: Yes.

[fol. 1309] Chairman Bond: And the allocation allowed by the plan?

The Witness: Yes.

Mr. Adams: We are trying to show the inequities under that Plan, Your Honor. We are not find- fault with the Orders of the Commission.

Chairman Bond: Well, you didn't make your records that way, and the Commission will say again that the allocations under this Plan better be such that these royalty owners will get their checks and they better be as large or larger than in the past and then they may continue for a thousand years if they want to,—you may proceed.

(Examination resumed.)

Q. Mr. Keplinger, you may proceed with the next answer, the Phillips-Fletcher?

A. The Phillips-Fletcher,—this lease is allocated under the Plan 6,128,100 barrels,—the lease is credited with 327 barrels per day,—and the equivalent years under the present production rate would be thirteen,—13.7 years.

Chairman Bond: Would that Plan give these royalty owners the same amount of royalty that they are getting today, or would it give them more,—that's what the Commission is interested in, I want to know.

[fol. 1310] A. It would give some of them more, and some of them less.

Chairman Bond: Very well, you may proceed.

A. The Phillips-Hartshorne is allocated 2,916,600 barrels according to the Plan, a production of 400 barrels per day,

it would take twenty years to produce that amount of oil at the present rate of production.

Chairman Bond: Now, would that give them the amount they are being paid today, or would it decrease it, these Hartshorne royalty owners, that's what we are interested in, whether they are going to get their money every time, we don't want these checks decreased along with the extension of production?

Mr. Williams: The whole fallacy of this line of testimony is that they are taking oil which would be produced under the Unitization,—if we have Unitization it won't be produced under the present allowable, it'll be produced under the Unitization process.

Chairman Bond: You contend that you are going to increase the oil and get your additional oil at the same time?

Mr. Williams: In answer to that question, in respect to the Phillips-Hartshorne lease, most of the royalty, the amount of royalty,—the royalty owners of the Hartshorne [fol. 1311] lease would be decreased under Unit Operations with the allowable of the field as such as it is today, with the same amount of oil coming out of the field as there is today and the allowable of the Hartshorne royalty owners would be decreased.

Chairman Bond: How much are they getting today and how much would the royalty be decreased?

By the witness:

A. That's shown in Table 2, in Exhibit 53,—the royalty owners of the Hartshorne lease would have royalty decrease, their royalty checks would be decreased.

Q. Under Unit Operations?

A. Under Unit Operations, with the same allowable to the pool, approximately 25%.

Chairman Bond: What would be the result of this,—under the allowable fixed by the Plan?

Mr. Adams: If the Commission please, I don't believe the Plan fixes it.

Chairman Bond: It doesn't,—where would this decrease go, would it go to someone else?

Mr. Adams: Yes.

Chairman Bond: Who would get the benefit of that decrease?

Mr. Williams: I would like for the witness to go to the blackboard and show that for the Commission in black and white.

[fol. 1312] Chairman Bond: The Commission will try to get some information for its own benefit,—very well take the witness and see what we can get out of him.

By the witness:

A. The Stephens-Pell well, the percent of total income is 5.04 to the Stephens Petroleum lease. Now, under the Plan as set out in the Plan the total allocation of this lease was 3.4.

Q. Then the royalty owners and operators would lose that percentage which would go over to the benefit of the Stephens-Pell, is that correct?

A. That's correct.

Q. Now, again referring to the allocations proposed by the Plan to the various leases in the area which are proposed to Unitized and considering the oil production or the ability of such leases to produce, will you determine the number of years that would be required to obtain the recovery of the equity of the allocations to such leases, referring now to the Phillips-Hartshorne lease?

A. The Phillips-Hartshorne had been assigned 2,916,600 barrels under the Plan.

[fol. 1313] (Mr. Keplinger is still on the stand, Mr. Adams examining the witness.)

A. (continued) reproduced 400 barrels per day in March, 1947, the equivalent life will be 20 years. The Phillips-Margaret under this plan has been assigned 1,397,400 barrels. In March, 1947, production of 200 barrels per day, the equivalent life will be 19.7 years. The Phillips-Oaks has been assigned 3,317,100 barrels under the March production of 600 barrels per day, the equivalent life will be 17.2 years. The Stephens-Gumbo has been assigned 664,700 barrels.

Q. Under the plan?

A. Under the plan. At the present time that lease is producing its oil as it is today that lease will not recover any

oil, although the plan has assigned it 654,700 barrels and that is a dry hole, drilled on the lease.

Chairman Bond: Has the plan assigned that dry hole any particular amount?

Witness:

A. No, it assigned the lease oil.

Chairman Bond: The other well is dry and it was assigned an allowable, a dry well, has it been produced?

Witness:

A. Not assigned to the well, but to the lease.

Mr. Adams: But the well is near the center of the lease?

A. Yes, sir.

Chairman Bond: That is what the Commission thought, [fol. 1814] it was assigned to the lease, but that is what we thought, it was assigned to a produced well, we don't want anything assigned to dry holes or produced wells, we will take that into consideration.

Witness:

A. The royalty owners have the Gumbo lease, today are receiving in compensation, while under the plan, Stephens-Gumbo has been granted .969 per cent.

Chairman Bond: And the Commission allowed them nothing for the entire lease, they are getting an allowable, whatever from the Commission today but the plan gives them that.

Witness:

A. But the Commission doesn't even consider that it's producing and it isn't in the order.

Chairman Bond: That isn't in the order?

Witness:

A. That is right.

Chairman Bond: But the plan puts it in the plan category.

Witness:

A. Yes.

Mr. Williams: Because of the testimony of the geologists under the plan that is the well that was given the oil out under unitization and it's entitled to the oil that is there, and again that is the fallacy of the whole thing.

Chairman Bond: You will have to convince the Commission that that oil is there.

Mr. Adams: Under the plan, would that as royalty proved to the Gumbo lease, it comes out of the pocket of the royalty [fol. 1315] owners who have production, is that correct.

Witness:

A. Yes.

Q. Explain the Stephens-Pell lease.

A. It was granted 1,416,600 barrels of oil under the plan, this well is producing.

Q. Are there other wells on the lease?

A. The well on the lease is producing an estimated 40 barrels per day, in March of 1947, based on the present rate of production divided into the oil allocated in this lease by the plan, the equivalent life, the present rate is 97 years.

Q. In other words, it will take 97 years to do that?

Chairman Bond: Would the checks of the royalty owners be decreased during that 90 years?

Witness:

A. Under the Pell lease it will be increased under the unitization.

Chairman Bond: The Commission has this in mind, unitization is proposed, from the proponents, if the proponents are correct to recover additional oil and great amounts of oil, if the checks are increased and an increase check runs on for 90 years, the Commission can't see an inequity on that, but if you run it for 90 years and the checks are decreased, we are not interested in that, but the increase, [fol. 1316] the longer you run the better you are off, and if you decrease them, that is different.

Mr. Adams: Mr. Keplinger, if you include the checks of the royalty owners under the Stephens-Pell, does that necessarily follow that the checks of the other royalty owners there will have to be decreased under the Stephens-Pell?

Chairman Bond: The Commission want to know that too.

A. On the basis of the same allowables to the pool, that is to follow.

Mr. Adams continues with the witness:

Q. In what respect to the Stephens-Pearson lease?

A. Stephens-Pearson lease is granted under the plan 605,500—the estimated daily capacity is 12 barrels.

Q. Per day?

A. Per day. The equivalent years of life at the present rate of production will be 138 years for that lease to produce the oil which has been assigned to it by the plan.

Chairman Bond: Would these checks be increased or remain staple or what?

A. They will be increased to the royalty owners to the Pearson lease.

Chairman Bond: Will all owners checks all be decreased during that ninety years?

[fol. 1317] A. The royalty owners' checks who would be decreased would be those who have had their property under-evaluated.

Chairman Bond: Who would they be, who will they be, pick out the leases if you will take property from one and give to another, give the names of the property involved so we can know where we are. If they are robbing Peter to save Paul, we want to know it.

A. The Palmer-Sturba lease, the Magnolia, possibly the I. Edwards, probably the Amerada-Edwards, these are some that indicate that.

Chairman Bond: We realize that when inequities exist between companies it must necessary exist between royalty owners, it's easy to give the companies, we want to know the royalty owners as well as the companies.

Mr. Adams: I think that the witness meant it would go to all royalty under the leases mentioned.

Chairman Bond: There is no question that in one company profits to the detriment to another company, then the royalty owners of those leases will profit to the detriment of the other royalty owners, if it goes to the Supreme Court and the Supreme Court will not have these royalty owners [fol. 1318] who are having an injustice done to them, the Commission doesn't have that, then we can't go and look up those leases according to the record, we must have them in the record, if Mr. Holland over here (indicating) is being done an injustice, it's one thing to say he is or is not, and we want to know it. Another thing, it's one thing to say if this company profited to the expense of another company, it is easy, the royalty owners are interested the same as the companies and when one set of royalty owners suffers at the expense of others we want their names in the record and we want to know just where we stand and what can or can't be done.

Mr. Adams continues with the witness:

Q. Mr. Keplinger, proceeding with the same information with respect to the Stephens-Plummer lease, if you please sir,—

A. The Stephens-Plummer, under the plan, was assigned 3,790,800 barrels, the March, 1947 day production was 600 barrels, the equivalent years of life will, at the present rate, be 17.2 years. In Stephens-Pohlman, the assignment under the plan was 695,700.

Q. Under the plan?

A. Yes, in March the only well that was producing 95 [fol. 1319] barrels per day. The equivalent years of life at the present rate is 20 years,—the Stephens-Samwil under the plan was assigned 291,200 barrels and on March 1st, 1947 the lease produced approximately 70 barrels per day. The future equivalent life at the present rate is 11.4 years. The producing well on this lease has been reconditioned and the present rate of production is high. The Stephens-Walker was assigned 211,200 barrels. The March production was 180 barrels per day, the equivalent life is 3.2 years. The Stephens-Brown located in the northwest part of the pool, was assigned 66,600 barrels. That lease is not producing at the present time.

Q. Is it a dry hole?

A. Yes, 330 feet from the property line.

Mr. Williams: Is that a Medrano sand dry hole?

A. It penetrated at a depth, at that depth.

Mr. Adams continues with the witness:

Q. At 330 feet over the south line of the property?

A. Yes.

Q. And the south portion included in the proposed unit area?

A. Yes, sir, and that lease has no production at the present time and will not make any production.

Q. Under the plan there will be some allocation to the royalty at the other leases and those had production?

A. Assuming that the allowable to the pool remains the [fol. 1320] same after unitization.

Q. Is that correct?

A. Yes, sir.

Q. Will you proceed with the last lease?

A. The Stephens-Oola Table has been assigned 152,400 barrels and as the forecast, that northwest lease which has been assigned production in the proposed unit area and at the present time there are no wells on this lease, there is a dry hole to the east of the lease toward production and a dry hole south of the lease.

Q. Each of which wells were drilled to a sufficient depth in the Medrano sand?

A. Yes.

Q. And still there is an allocation of 252,000 barrels of oil under the plan?

A. Yes.

Q. In regard to the royalty owners under that lease area under the plan, they would get royalty but would it be at the expense of other royalty owners who have proven production?

A. Yes, provided that their liability to the pool was the same after unitization.

Q. Now, you have testified, if I understand you correctly, that the maintenance of pressure as per the present Order of the Commission as to gas production, that there will be

[fol. 1321]as much oil produced from the sand in the various segments as from the proposed unit plan as adopted?

A. It will be comparable recoveries from the gas cap as at the present time.

Q. And it is the gas and from the present reserves?

A. That is correct.

Q. You have made a written calculation of your testimony in this respect that you have just reviewed?

A. Yes.

Q. I hand you what has been marked by the Reporter as Exhibit 88 and ask you to state if that is the written calculation to which you referred?

A. It is.

Q. We offer in evidence Exhibit 88.

Chairman Bond: Received.

Mr. Williams: The proponents wish to object because it is incompetent, irrelevant and immaterial.

Chairman Bond: Overruled and exceptions allowed.

The Commission will recess until 1:30.

[fols. 1322-1323] Chairman Bond: Gentlemen, you may proceed in C. D. 1308.

Mr. Keplinger recalled to the stand.

Witness examined by Mr. Adams:

Q. Before lunch, Mr. Keplinger, you attempted to make a hurried calculation with results in respect to royalty income and in respect to certain royalty leases, here involved, as to the adoption of the proposed plan of unitization, have you made some further computation with respect to that during the lunch hour?

A. Yes, I started with the first lease as shown on Table No. 2.

Q. Pardon me, when you say lease, you mean lease hold property that includes both the royalty interest and the working interest?

A. That is right.

Q. 1/8 and 7/8?

A. Yes, and from Exhibit 53-R I obtained the per cent of total current income to the respective leases, that it claimed to have, Table 1.

Q. In Exhibit 53-R?

A. Exhibit 53-R and the last column of table to have Exhibit 53-R contain the total per cent of interest allocated to the respective leases, the first lease shown in Table No. 2 is known as the Beamer, it is Tract No. 15. The operator of that lease is the Amerada Petroleum Company, the per cent of total current income shown on Exhibit 53-R of the [fol. 1324] pool total is 2.03988 per cent. The total per cent of interest in unit is 1.12313, the total average daily income for the Beamer lease which includes the value of the oil and tests produced from that lease, both the royalty and the lease-owner interests, lessees interest, taken from Exhibit 53, Table 3, Column 1 is $196.08 per day income, the royalty income from the Beamer lease per day, assuming a 1/8 royalty which is the common royalty right in the West Cement field—field amounts to $24.50.

Q. For what period of time?

A. Per day. An estimated royalty income, a proposed unitization with the assumption of the same total income per day would be $13.65.

Q. Or a reduction of what?

A. A reduction of approximately $11.00 per day to the royalty interest.

Q. Well, now, without going through the steps from which the computations were made, assuming that they were made in a similar manner, would you refer to one or two other lease holders including the royalty interests as to whether there is an increase or decrease from the proposed plan of unitization as adopted.

A. Yes, sir, the Edwards interest in Tract No. 49, operated by Amerada, that would be an increase. The Hartshorn interest, Tract No. 43 operated by Amerada, there [fol. 1325] would be a decrease. The McClaren interest in Tract No. 69, at the present time in oil produced from this lease there is no income. Under the proposed unitization this tract would obtain income and therefore there will be an increase. The same applies to the McClaren royalty interest on Tract 70 at the present time there is no in-

come, the unit will give this income, so there is an increase; the same applies to the Wood Tract No. 50, at the present time there is no income, the unit will give this income and there will be an increase with reference to the Anderson-Prichard lease, the Davis royalty in Tract 62 there will be a decrease.

Q. No royalty income?

A. No royalty income. Referring to the Hay's Interest, Tract No. 40, at the present time there is no income and there would be an increase under the proposed unitization. The Anderson-Prichard lease, royalty interest known as McClaren A, Tract 67, has no income at this time and after unitization there will be an income because there will be income allocated to this property. The McClaren B, Tract 68, operated by Anderson-Prichard, no income after unitization, therefore there will have to be an increase, I mean that will have no increase. The Pickard royalty interest, Tract No. 58, operated by Anderson-Prichard, after unitization, under the proposed plan of unitization, there will — a decrease in the royalty interest; all of these statements [fol. 1326] are based on the assumed facts that the income to the unit will be approximately the same as the income to the respective interests today and that is according to the order of the Corporation Commission, and assuming these allowables will remain as of today.

Q. As,—referring to the Stephens-Brown lease, what tract is that?

A. The Stephens-Brown is Tract No. 3.

Q. And that is a lease which is in the complete northwest corner of the proposed unitized area, isn't it?

A. No, there is one other lease that is further west.

Q. This is the Brown lease, is it not, on which there is a well drilled to a depth sufficient to test the Medrano sand?

A. Yes.

Q. Approximately 330 feet from the south property line, from the lease?

A. Yes.

Q. And that area, irrespective of the dry hole, that well is a dry hole?

A. Yes, sir.

Q. As under the proposed unit plan to be allocated 66,600 barrels for oil production?

A. Yes, sir.

Q. In your opinion, will it be possible under any method [fol. 1327] of operation to secure 66,600 barrels or any lesser amount of oil from the Medrano sand under the Brown lease?

A. I think that it will be impossible to secure the 66,600 or any lesser amount.

Q. In other words, you don't think that there is any oil there under the Medrano sand in commercial quantities?

A. Yes, of recoverable oil, also in making these computations of increases and decreases of this kind in respect to the royalty interests in the field of the Phillips-Hartshorn lease, Hartshorn Tract No. 42, which I discussed this morning, will have an increase in royalty income under these same conditions instead of a decrease as I earlier stated.

Q. That is when you made the hurried computation this morning.

A. Yes, sir.

Q. Now, referring to the Oola-Tahle lease area, what tract number is that? Stephens-Oola-Tahle.

A. That is Tract No. 1.

Q. And that tract is at the complete northwest corner of the proposed unit area, is that right?

A. Yes, sir.

Q. It has the dry Brown well to the east and the dry Gumbo well to the south, is that correct?

A. That is correct.

Q. Both of which wells were drilled to a depth sufficient [fol. 1328] to test the Medrano sand, is that right?

A. Yes, sir.

Q. Irrespective of that fact under the unit plan, it has allocation, Oola-Tahle, of 152,400 barrels of oil, in your opinion, will it be possible under any method of operation to procure 152,400 barrels of oil or any other amount of oil from the Medrano sand from the Oola-Tahle well?

A. With the present information, I don't think that amount or any other amount will come out from under that lease.

Q. In other words, you do not think that there is any oil under the Oola-Table lease?

A. Recoverable oil?

Q. Is that your opinion?

A. Yes, sir.

Q. Referring to the Stephens-Pierson, what was the number assigned to that?

A. Pierson well was increased to, I mean to interest No. 41.

Q. What are we taking the numbers from?

A. These numbers are taken from exhibits,——

Q. Are they taken from the proposed plan of unitization?

A. Exhibit No. 1, Exhibit A of the proposed plan of unitization, these are the tract numbers that are used on the map of the proposed plan.

[fol. 1329] Q. What tract number did you say the Stephens was?

A. Tract 41.

Q. To that tract, under the proposed plan of unitization, there has been assigned 605,500 barrels of future production oil from the Medrano sand, the only well on the property producing at the rate of 12 barrels per day, I believe you testified that the present production of the lease hold at all took 138 years to produce its amount of oil that the unit proposes to be assigned to that acreage?

A. That is correct.

Q. In your opinion, would it be possible under any plan of operation with the presently known facts to produce 605,500 barrels of oil from the Pierson lease?

A. It would be possible, I mean impossible to produce this amount of oil from the Pierson No. 1 well.

Q. Whether or not any other well that might be drilled on the property which would cause the production of oil is problematic?

A. It would depend on the development and where the wells *and where the wells* are located and sand conditions.

Q. These are things that are not known, is that correct?

A. That is correct.

Q. In what respect to the Stephens Dome-Bo lease, what tract number is that.

A. Tract No. 2.

[fol. 1330] Q. And that is in the west extremity of the area proposed to be included in the unitization plan?

A. Yes, sir.

Q. That is a dry hole drilled in the center of the tract?

A. That is right.

Q. That has been assigned under the unit plan 654,700 barrels of oil, in your opinion will it be possible to produce that amount of oil or any lesser amount from the Stephens-Dome-Boe lease from the Medrano sand?

A. Present indications indicate that you will not produce that amount of oil or any lesser amount on what we know today.

Q. Referring to the Stephens-Pell well, what is the number assigned to that?

A. That is tract No. 4.

Q. That is under the proposed plan of unitization 1,416,600 barrels of oil, the tract now only producing 40 barrels a day in the Medrano sand, in your opinion under these facts now known will it be possible under any method of operation to procure 1,416,600 barrels of oil under that lease?

A. I do not think that it's possible to get anywhere near 1,416,600, you might then add that over a royalty basis that these reserves are estimated future recovery, were in ones right up or down, here is a lease that has been granted almost as much as the Palmer-Sturba lease (indicating). [fol. 1331] The Palmer-Sturba lease has 1,730,500 barrels, it is almost as much as Palmer-Sturba and they produce 400 barrels a day and the performance of the wells indicate that to be some of the best wells in the pool and far below their capacity to produce, the thickness of the sand and producing characteristics of the sand are probably as good as any wells in the pool, they are producing at very low gas oil ratio and yet have been assigned a small amount of oil on the lease, it hasn't been proven and only is that probably to the top of the sand for the last eight months that the lease is still being cleaned out, the well on the lease is still being cleaned out and the last proration statement of the Corporation Commission still doesn't show that that lease is under the West Cement Medrano pool as a producing well, it has been assigned almost the same amount

of oil as Palmer-Sturba, it has been on the proration statement since 43.

Q. Accordingly, in your opinion, if I understand you correctly, you do not believe that that has been a thorough evaluation in the equities with respect to the leases that we have just discussed in the event of the formation of the unit.

A. That is correct.

Q. Now then, in consideration of the proposal, in the proposed unit plan in consideration of the present unit income as one of factors, I wonder if you will illustrate [fol. 1332] to the Commission your view as to inequities that will arise as the result of the application of such factor.

A. Yes, as an example, the Anderson-Prichard Davis well, Tract No. 62, the tabulated total value of the recoverable oil expectation is a percentage of the total value of recoverable oil from the field as shown on Exhibit 53, as .1515 per cent of current income granted this lease in the allocation formula, the per cent of total current income is 1.405, the per cent of current income from this lease is approximately nine times the per cent of recoverable oil and gas of the Davis lease. The plan gives credit to 80 per cent, the basis of the value of recoverable oil and 20 per cent to the current income factor and according to Exhibit 53, the per cent interest in the unit finally is .402, the increase in interest to the Anderson-Prichard Davis by giving consideration to the income factors here, that lease approximately 2.5 times as much interest in the proposed unitization program as the figures of recoverable oil as set out in the plan of .151.

[fol. 1333] A. (continued) and there other examples to the same effect, showing inequalities arising from giving consideration to the present pool income.

Q. Have you tabulated those, Mr. Keplinger, with respect to tracts?

A. Yes.

Q. I hand you Exhibit 89 and ask you to state if that is the tabulation to which you have just referred?

A. It is.

Mr. Adams: We offer in evidence Exhibit 89.

Chairman Bond: Received.

Q. Now, wherein does the inequity arise as between the properties and royalty owners and leases, lease owners, under this current income factor as applied equally through the whole proposed Unitized area?

A. The properties which are completely developed and which have a small recoverable oil reserve will be given a larger percentage interest as the result of the income factor, while properties which have a large recoverable oil reserve and haven't been fully developed would be penalized.

Q. Going to the map, Mr. Keplinger, on Exhibit 54-R, refer to the Southeast corner of segment "E",—what is the lease of the Southeast corner of the proposed unitized area?

A. The first lease is the McLaren lease, known as Tract 70.

Q. Has there been any well drilled on that tract to the [fol. 1334] Medrano area?

A. To a depth sufficient to encounter the Medrano sand if it existed?

Q. That's right.

A. Yes.

Q. Where was that well drilled?

A. The well was drilled in the Northeast of the Southeast of the Southeast of Section 6-5N-9W.

Q. Was there any Medrano sand section found in that well, or was it dry?

A. To my knowledge the Medrano sand was missing in this well. In examination of the electric log didn't show the same stratographic depth, the same comparative depth as the well to the Northwest.

Q. You mentioned that this well you spoke of was on Tract 70, that's not correct, is it?

A. No, it is on the McLaren lease.

Q. Outside the Unit?

A. Yes.

Q. Mr. McLaren has the lease in the East Half of the Southeast of the Southeast of the Section, Section 6, hasn't he, he owns that land?

A. That's correct.

Q. And this well was drilled on a 10-acre tract?

A. Yes.

[fol. 1335] Mr. Williams: Now, only the part within the geological boundaries of the pool?

A. The well that you spoke of as on the McClaren lease and the boundaries of the Unit around the 10-acre location on which this well was drilled, that's true, but the well is not within the confines of the proposed Unit.

Mr. Williams: But the well is not on Tract 70, is it?

A. No.

Q. And it is outside the Unit boundary?

A. Yes.

Mr. Adams: But it is on the 10-acre tract, a tract which is within the Unit.

Q. Is there any production from the Medrano sand in the Southeast of Section 6?

A. No.

Q. And the only well that has been drilled in the Southeast Quarter of Section 6, to the Medrano sand, didn't have any Medrano sand in it,—that's correct?

A. That's correct.

Q. In your opinion it would be,—would it be possible under any part of operations to produce any amount of oil from the Medrano sand from the area incompassed or proposed to be encompassed by the present unit constituting part of the Southeast quarter of said Section 6, from presently known facts?

[fol. 1336] A. From presently known facts the closest well to the Southeast quarter of Section 6 is in the Anderson-Prichard-Prentice B No. 1, located in the Northeast of the Southeast of the Southwest of Section 6, or 330 feet from the West line of the Southeast quarter of Section 6. This well, at the present time is making,—it has an allowable but it isn't making it, 3 barrels per day and wells of this depth some 5800 feet or non-commercial even at the price of $2.00 per barrel. So far as economics are concerned there is no——

Q. I'll ask you this,—is there, in your opinion, any economic reason, which is known facts, to include any part of the Southeast quarter of said Section 6 in this proposed Plan?

Mr. Williams: Objected to,—he asked him if it was economical. The law is that that tract has to be given credit for the value of the oil it is going to produce——

Vice-Chairman Weems: Can you make your question a little more specific,——

Mr. Adams: I'll try to, Your Honor,—Mr. Keplinger, is the Southeast quarter of Section 6, to which we have just referred,—is that up structure or down structure in segment "E"?

A. It is down structure.

Q. So if there was to be any gas injection in segment "E", would there in your opinion properly be any gas in-
[fol. 1337] jection into the Southeast quarter of said Section 6?

Judge Brown: The same objection.

Chairman Bond: If the Commission understands, Counsel for the proponent and protestants, the real gist of the action, there is this,—is the oil there,—you might bring out that point.

Mr. Adams: Well, if the Commission please, this is at the base of segment "E"; as the map shows and there have been no wells drilled on it. It is very apparent that if they can get it into the Unit and don't have to drill a well there, it might make some profit, but even by gas injection it would never recover anything from this tract, because it is at the bottom of the pile.

Chaiman Bond: The first question is, if there is any oil there and if there is oil there, whether or not it is recoverable and if it is recoverable by any means, that might be reached by this Unit Plan.

Mr. Williams: It isn't the question of whether there is a well there today,—there are to be other wells drilled.

Chairman Bond: Well, if there is oil there, the Commis-
[fol. 1338] sion will see that it is recovered if science will do it.

Mr. Adams: Well, why isn't it drilled?

Judge Brown: We don't spend $100,000.00 to recover $50,000.00 worth of oil.

Chairman Bond: Gentlemen, you might ask the witness if he has made an investigation or if he has records to show

that in his judgment oil underlies that structure and if so, what amount and whether or not it can be recovered by this Unitization Plan.

By Mr. Adams:

Q. Mr. Keplinger, from your study of the Medrano sand and the oil and gas sand in segment "E", do you have an opinion as to whether or not there is recoverable oil in the Southeast quarter of Section 6 here under discussion?

A. In making the appraisal of the recoverable oil and gas areas, of the oil and gas which might be expected in the Southeast quarter of Section 6-5N-9W, Caddo County, the important fact which we must consider is what would be the type of production to be encountered in the Quarter Section, that Quarter Section, this Quarter Section is on the East side and the well which has been drilled to a sufficient depth to encounter the Medrano sand failed to encounter it.

Q. That's on the West side, on the outside of the Quarter Section,—how many feet away?

A. 330 feet away,—the Anderson-Prichard-Prentice-B [fol. 1339] No. 1 was drilled in November, 1945 and completed, a small oil and gas well, so, under the present the recovery from this well has been rather small and according to Exhibit 53, the lease had produced 19,200 barrels of oil as of the date of this Exhibit, March 1, 1946. I believe it is,—no, sorry, 60,000 barrels, as of March 1, 1946. By the Corporation Commission's test in February this well produced some twelve barrels of oil per day at a gas-oil ratio of 7030 cu. ft. At the present time the well hasn't climbed below that last test.

Q. It is now producing what?

A. It had an allowable of 3 barrels in May, 1947 and didn't produce that.

Q. Go ahead with your appraisal.

A. With those facts in mind the recoverable oil from the Southeast Quarter of Section 6 is problematical and——

Q. Pardon me, would you recommend to any person that they drill a well in the Southeast corner of Southeast Quarter of Section 6, to get oil production?

Mr. Williams: Objected to, as incompetent, irrelevant and immaterial for the same reasons previously stated to the Commission awhile ago,—it is entirely outside of the issue here.

Chairman Bond: Well, he might ask him what it costs to drill a well and if he knows what the amount of recovery would be.

[fol. 1340] Q. Do you know what, under the proposed Unitization Plan, what is to be paid for each oil well under this Plan,—in round figures $50,000.00?

A. Yes,—well, that is set up in each case.

Q. You may state if in your opinion, the drilling of a well to the Medrano sand in the Southeast Quarter of Section 6,—if one should drill a well there would they be able to recover their costs from the production of oil or gas from that well?

A. It is very doubtful if they would be able to recover their costs.

Q. And that probably is as good reason as any why Anderson-Prichard hasn't drilled it, isn't it?

Mr. Williams: We object to that as incompetent, irrelevant and immaterial.

Chairman Bond: Sustained.

Q. Now, you understand the theory of gas injection and the maintaining of gas pressure in the gas zone, do you?

A. Yes.

Q. What is the purpose of it?

A. The purpose of the preservation of gas energy in the gas-cap is to provide energy for the development of the oil down structure, to the respective bore holes in the oil horizon.

Q. And this said Southeast Quarter of Section 6 is clear down at the bottom of the structure in segment "E", isn't it?

A. Yes.

[fol. 1341] Q. If there isn't any oil there, how could there be oil there by maintenance of pressure in the gas-cap?

Mr. Williams: He is assuming a fact not shown to exist.

Chairman Bond: Sustained.

Q. I'll change my question,—if there is no amount of oil at this time under the Southeast Quarter of Section 6, which would economically justify the drilling of a well, if it is recovered, would the maintaining of a gas-cap by repressuring cause to be moved into that area oil sufficient to justify the development for its recovery?

A. Before any oil could be recovered from that particular location, whether the oil was there or moved into there, it would be necessary, in my opinion,—well, in my opinion, it isn't probable that oil and gas in commercial quantities could be recovered. The chances of getting are very slim and any additional recovery that might be had from pressure maintenance would not in my opinion justify the drilling of a well there by the Unit, even by the Unit and the Unit wouldn't profit by the oil in that area, particularly the oil under tract No. 70.

Q. That is in the event there is any oil in the Medrano sand there?

A. Yes.

Q. Now, Mr. Keplinger, I hand you what has been [fol. 1342] marked by the Reporter as Exhibit No. 90,—state what that is?

A. Exhibit No. 90 is a map showing a cross section through the Southwest, South Half of the Southwest Quarter of Section 35-6N-RW, the Palmer-Gulf-Sterba lease.

[fol. 1343] Mr. Keplinger is on the stand.

Mr. Adams examines the witness:

A. The top of the Medrano sand as indicated and the base of the Mendrano sand as indicated on the bottom part of the Exhibit marked A is a map of the southwest ¼ section of 35, pertaining to the West Cement Medrano unit prepared by the geological committee showing the thickness of the Medrano oil sand, this is a reproduction of the exhibit of this map in the lower left hand corner is instead, identified by A, is a reproduction of Exhibit 75 in behalf of the proponents.

Q. Go ahead.

A. I will indicate near the letter A. In the lower central part of the exhibit that is on that map designated as D, and it's an isobaric map showing the thickness of the Medrano

oil sand below and prepared by the same committee of geologists and it is Exhibit 76.

Q. Exhibit 76?

A. Yes, it is Exhibit 76. The map in the corner, lower right hand, indicated by the letter C, is a reproduction of the map indicated and known as Exhibit 77 which is an isobaric map showing the thickness of the Medrano oil sand showing the top of the Medrano sand is encountered below a depth of 6000 feet from the surface. I will mark 77 opposite the letter C. The line of cross-section at the top is indicated by the light line which runs from the southwest [fol. 1344] corner of the Sturba lease, northwestward to the center of the east line of the Sturba lease.

Q. Would it not be better understandable if you would mark in the upper portion of the exhibit in red the Medrano sand, the oil bearing portion of it.

A. I believe that the exhibit here in color, the area in red too represents the Medrano sand which will be encountered, acre-feet of Medrano sand to determine the volume as to what would be encountered at a depth of 6000 feet.

Q. I think that this copy, even though it's not a photostatic copy, the Commission can tell more about it, will you mind taking this other map off and putting this one on the board? (Indicating) (Hands the witness another map) Very well, now, will you proceed to illustrate from this Exhibit 90, the portion of the Medrano sand at that particular lease, on that particular lease, the Palmer-Sturba lease which took the drained—contacting the sand at a depth of 6000 feet.

Judge Lowe: It is objected to as incompetent, irrelevant and immaterial, it doesn't show that that well will be drilled up structure.

Chairman Bond: Sustained and ask you to further qualify your witness.

Mr. Adams continues with the witness:

Q. Mr. Keplinger, will you have radical drainage from [fol. 1345] from the Medrano oil sand section?

A. I have an exhibit here that might show that.

Q. Handing you Exhibit 91, I will ask you to put that on the board and explain what it is.

A. Exhibit 91 is an exhibit which shows—the top of the Medrano and a portion of the Sturba lease as a base and a portion of the oil bearing sand as indicated by the color red and if a well were drilled up here (indicating), the Sturba lease here (indicating), and encountering the top of the Medrano sand above 6000 feet in the Medrano sand is a reservoir or porous rock which is,——

Judge Lowe: Might I ask the witness a question, preparing for an objection?

Chairman Bond: Very well.

Judge Lowe: Mr. Keplinger, haven't you testified that the gas caps are shut in and that will drive the gas down-structure instead of up-structure?

A. That is correct.

Judge Lowe: I object to the witness saying that, he made a contradiction, and he said it would go up-structure and the other statement is driving it down-structure.

Mr. Adams: Mr. Kaveler testified, and Mr. Montgomery did, that you have radical drainage in the Medrano gas sand, I think that this witness can illustrate by this exhibit [fol. 1346] that it will occur and that the purpose of the exhibit——

Chairman Bond: Oh, well, if the witness can show that it will occur, you may proceed.

Judge Lowe: Note our exceptions.

Chairman Bond: Exception allowed.

A. The previous testimony shows that the reduction of the 24,000,000 cubic feet per day down to 4,000,000 feet per day will sustain the pressure in the various segments, in the West Cement field, and that the mechanics for the production will be for the gas to move downward displacing the oil that, I believe, is the former testimony.

Mr. Adams continues with the witness:

Q. Go ahead and explain it.

A. In the draining of a well to the depth of 6000 feet and the completion of that well at this time or 80 times, subsequently the time that the gas cap is completely expanded down to a depth of 6000 feet, the well drilled at

that depth, because of the condition of the Medrano formation, both the core analysis be introduced and the property at length itself, if the wells that have been drilled to it, that the four holes at this point under production direct the, rather drop the pressure and a drop in the reservoir pressure through the bore hole production of oil, there will be drainage of oil to a point of least resistance to the bore [fol. 1347] hole sucking from the reservoir and the drainage will be both radical and up through the bottom of the horizon and the errors indicating that the drainage will be both down structure and up structure to this particular well and that is the information regarding the reason that that well will drain the oil before the gas cap extends down to 6000 feet.

Mr. Lowe: I move to strike the answer because the witness has shown by closing in the gas cap that the pressure is going downward.

Chairman Bond: The witness has testified it will go both ways, you cross examine him.

A. Witness: But it didn't go both ways at the same time.

Chairman Bond: You testified that it would go downward to the bore hole and upward to the bore hole.

Mr. Adams continues with the witness:

Q. Now then, if a well drilled encountered the Medrano gas production of the sand at a depth of 6000 feet, do you think that the drainage to that bore hole will be the portion below 6000 feet upstructure in the oil bearing sand, isn't that correct?

Mr. Lowe: Same objection.

Chairman Bond: Overruled, exception allowed.

A. Well, my drainage from that particular area until the gas cap extended down to the bore hole,——

[fol. 1348] Mr. Adams continues with the witness:

Q. If that is the portion that you have marked checkered on the map, Mr. Witness——

A. Now the part that is checkered is the indication of the Medrano formation which, as you gave a depth there of

6000 feet to the base of the Medrano and still none of the area will have the top of the Medrano below 6000 feet.

Q. I don't believe I followed you, I see that has the part of the Medrano section that will be found at 6000 feet or above——

A. Which will lie below it, is a portion of the Medrano, which will be found when drilled and encounter the top at less than 6000 feet by sand volume will lie below a depth of 6000 feet from the surface.

Q. And be up-structure, isn't that right?

A. Be up-structure.

Q. Yes, isn't that correct?

A. It will be up-structure from the bore hole which penetrated the top of the Medrano at 6000 feet.

Q. That is what I mean.

A. And drilled completely through.

Judge Lowe: We object as incompetent, irrelevant and immaterial.

Chairman Bond: Overruled, exception allowed.

[fol. 1349] Mr. Adams continues with the witness:

Q. Mr. Keplinger, you understood that under Exhibit 35, that it was the contention of the Palmer Oil Corporation with respect to the Sturba lease, that it is entitled to the Medrano sand, any oil from the Medrano sand which may be reached by a well drilled to a depth of 6000 feet, subject of course to the over-all royalty in favor of Gulf Oil Corporation, in the proposed plan of unitization, in Exhibit 53-R, in the computation by proponent's only allocation for the Palmer Oil Corporation, the production for the oil in the Medrano sand, the Sturba lease which lies above 6000 feet, suggests of course again the over-riding royalty of Gulf Oil Corporation, you have made a computation of the equities which should be allowed with respect to the Palmer Oil Corporation and Gulf Oil Corporation in event of the formation of the unit, following the theory and construction, the oil corporation's place on exhibit 35?

A. Yes.

Q. You have that.

Mr. Lowe: What are you going to do now?

Mr. Adams: I want to give that computation.

Mr. Lowe: I want to object as contrary to the reason that——

Chairman Bond: The witness may contradict himself overruled. Exceptions allowed.

[fols. 1350-1351] Mr. Adams continues with the witness:

A. I want to, if I can, to explain that contradiction.

Q. Yes, go ahead and explain it, if the Commission thinks that it wishes an explanation, I wish you would.

Chairman Bond: The Commission doesn't care for it unless counsel does.

Mr. Adams: I would like for the record to include it.

Chairman Bond: Very well.

Mr. Adams continues with the witness:

A. The gas cap is in the vicinity of a sub-sea depth of minus 4050 feet, about this plan, (indicating) on the map as indicated by the sub-sea type at the left hand side of the map, now the Palmer Oil Corporation has drilled their No. 7 well and it will recover oil and gas from the formation until the gas cap moves down and passes below the bottom of the bore hole and until that happens a well drilled to a depth of less than 6000 feet will produce oil.

Q. Now then, let's go to the computation to which I referred, Mr. Keplinger.

Chairman Bond: We will have a five minute recess.

[fol. 1052] Chairman Bond: Gentlemen, you may proceed.

Mr. Adams continues with the witness, Mr. Keplinger:

Q. I believe I asked you if you had made a computation of the equity which could be assigned the Palmer Oil Corporation in the event the proposed unit was approved by the commission.

A. On the basis of what?

Q. On the basis of the computation of Contract 35 giving to the oil corporation any oil in the Medrano sand that might be encountered at the depth of 6000 feet.

A. Yes.

Q. Will you please state what that computation shows and further illustrate it with reference to Exhibits 90 and 91.

Mr. Lowe: We object to that as incompetent, irrelevant and immaterial and contrary to Exhibit 35.

Chairman Bond: Overruled, exceptions allowed.

A. In order that the record will be clear, the calculation which relates to the Palmer Oil Corporation on the basis of Contract 35 is—the question, the values for the Medrano sand volume as shown in Exhibit 90 and are based on the maps at the bottom of the exhibit.

Q. Constituting a part of the exhibit?

A. And constituting a part of the exhibit, now calculating Palmer's equities, the volume of the Medrano sand below the oil-gas contact, bound to and including all of the [fol. 1353] Medrano sand above 6000 feet is used, plus a cross patch area shown on Exhibit 90 which includes the Medrano sand, below a depth of 6000 feet, but where a well could be drilled that will encounter the top of the Medrano above a depth of 6000 feet, I think that is a clear representation of the basis of this calculation and on that basis the oil zone, of course, is increased by this intermediate reservoir volume below a depth of 6000 feet where the top of the Medrano sand is encountered above 6000 feet and on that basis Palmer's interest in the unit will be approximately 6.31 per cent.

Q. And what would Gulf Oil Corporation's equity be in the Sturba lease on the same basis?

A. The Gulf equity would be approximately 1.36 per cent.

Q. In Exhibit 90, this was prepared using the top of the Medrano in Sturba Palmer No. 7 as testified to by Mr. Montgomery.

A. That is correct, and the Committee map.

Q. In following Mr. McKee's testimony with respect to the fact that the top of the Medrano sand is found in the Palmer No. 7 was approximately 12 feet higher, correct me if I am in error, than was found by Mr. Montgomery.

A. Yes, sir.

Q. Based upon Mr. McKee's testimony, approximately what would be the equitable attributable to the Palmer Oil Corporation?

A. Gulf Oil Corporation assuming the unit was formed and a computation was made in accordance with the method followed in Exhibit 53-R.

[fol. 1354] Q. All right, go ahead.

A. On the basis of the representation of the thickness of the net Medrano sand to the top encountered is below 6000 feet, from Mr. McKee's interpretation, that is Exhibit 80, the volume of Medrano oil sand on Exhibit 80 is less for Gulf interest than the volume shown on the Committee's map, be noted as Map C, on Exhibit 90 and as a result it gives more acre foot of oil sand on the Sturba lease to the Palmer interest.

Q. What is the difference?

A. That will include the per cent somewhere in the neighborhood of 6.67, those are only approximate on the list, they have not been worked out completely and the Gulf interest will be approximately 1 per cent but at lease have been made here and are not the exact calculations that would then be checked.

Q. You didn't check that calculation?

A. Yes, but the second volume for computation production so that it could be checked was indicated on the McKee map, Exhibit 80, the Medrano sand or the top of the Medrano is encountered at 6000 feet according to our volume determination is 1347 feet on Exhibit 90, the comparable figure.

Q. On Mr. Montgomery's map?

A. Mr. Montgomery's map.

Q. You mean 1654 feet?

A. 1654 acre-feet and by suggesting 1347 feet for Gulf [fol. 1355] instead of 1654 feet, the answer could be derived.

Q. And the credit resulting could be attributed to Palmer Oil Corporation?

A. It will increase Palmer's interest.

Q. Very well, now referring there at the blackboard further to Exhibit No, 90, we would like for you to further explain to the Commission the differential in places making

radical drainage into the well bore necessary of the oil bearing portion of the sand.

A. On Exhibit 91, the reserve between the top and the bottom of the Medrano; as indicated by a red color, and that of course is the Medrano sand with porosity of approximately 20 per cent under the Sturba lease and the oil in the formation of the dissolved gas is under pressure of several hundred pounds and has communication through the formation upward toward the gas-oil contact and into the gas zones, now if a well was drilled into the Medrano formation and production was taken from the bore hole, that act of taking production reduces the pressure around the bore hole and the production and pressure would cause a differential in pressure to be set up away from the well and there will be a slope of oil and in all cases it's dissolved.

Q. In other words, the flow will be all around in connection with the lease pressure.

A. That is right.

[fol. 1356] Q. Have you heard the testimony that has been offered heretofore with respect to the movement of the oil structure into the gas bearing portion of the Medrano sand, from your study of this area, is it your opinion that the oil, because of differential of pressure in the gas area and the oil area, is moving up-structure or does the experience in the area show that the oil wells are going to gas wells?

A. The experience indicates that the oil wells are going to gas wells and they have for sometime.

Q. Which means what?

A. That the gas is moving downward.

Q. Is the oil moving upward?

A. Not around these wells (indicating).

Q. The only experience is in the field that the gas is moving down-structure, but the oil is not moving up-structure, is that correct?

A. That is correct.

Q. Now then, you have had considerable study of this proposed plan and unitization, do you have an opinion as to whether or not the same amount of oil which might be expected to be recovered from these five statements under any plan of unitization that you might discern in this instrument that unitization would occur any more quickly than

by normal operation where there is adequate production of the oil bearing production of the Medrano sand in this area? [fol. 1357] A. Under normal operation, you understand, under the recent Corporation Commission order whereby the conservation,——

Q. That is what I mean, we are assuming, I meant to assume that there will be a continuation of the conservation of the amount of gas through restriction that might be produced.

A. I believe that the oil will be produced from the reservoir strictly under normal operations as they would under unit operations, if that answers the question completely.

Q. And if it is produced under normal operation, then each land owner and royalty owner will get exactly what he is entitled to?

A. He will get what he is entitled to provided his leases are adequately developed and operators are diligent in procuring oil under that reservoir of his property.

Q. What if anything do you preclude, if anything, that the proposed unitization plan will accomplish if adopted?

A. Well, the various lessees in the pool, of course, are not to be required to drill their locations to adequately develop the pool because that will be shifted over to the unit and under the present plan for operating the pool, I see that will probably be the only advantage.

Q. I believe that is all.

[fol. 1358] Reford Bond, Jr., examines the witness for further direct examination:

Q. Mr. Keplinger, I direct your attention to the northwest area of the proposed unit plan as prepared on Exhibit A-1 of the applicant's exhibit which is a map and particularly maps 1, 3 and 2, in connection with the questions that I am about to ask you about the tracts, I want to ask you a qualifying question too, that is, are you familiar with the unit operation plan such as gas injection, recycling and other methods used and proposed to be used in unit operation?

A. Yes, sir.

Q. And you have made some studies of such operations as proposed in the Medrano pool?

A. Yes, sir.

Q. And in particular as to the northwest portion of the pool?

A. That has been included in my study.

Q. Now then, tell the Commission how you go about producing the oil under unitized methods such as gas recycling, gas injection or water injection on Tracts 1, 2 and 3 of this Exhibit A.

A. I will mark on Exhibit 54-R the numbers 1, to indicating Tract 1, number 2, to indicating Tract 2.

Q. I believe the one you marked 2 was 3.

A. Domingo lease is 3, this area is in my opinion not commercial for competitive operation and unit operation [fol. 1359] and if they are not to be produced under idle methods.

Q. Now assuming that there is some oil in the Medrano sand in that area, how would it be produced if it could be produced at all by the use of gas repressuring or recycling or water injection or any other method which might be used in unit operation.

A. If Tracts 1, 2 and 3 contained oil which would be commercially feasible to——

Q. Whether commercially or not, Mr. Keplinger, if they obtained any oil at all.

A. You drill a well to the top of the Medrano and complete it through the Medrano sand.

Q. And what do you do?

A. Produce the well.

Q. Will you use gas injection operation, or could you?

A. It depends on the quantity of oil that will be produced.

Q. Assuming that there is a small quantity and you want to recover regardless of cost by unit operation, what will you do?

A. Well, I believe I would drill a number of water wells near here (indicating) or in the proposed oil-water contact zone and then oil wells up-structure from there, particular line of water wells and force the oil to the oil wells and after the oil wells have been completed the next step would be to put water in the oil wells that were depleted and drill in that line of oil wells up-structure and force the oil up to them.

[fol. 1360] Q. Now is there any other method that could be used to recover the oil such as gas injection?

A. Yes, gas injection could be used.

Q. How would you proceed to go about that method?

A. It would depend on the quantity of sand found in the thickness of the respective tracts, it could be either done with gas wells drilled in between the oil wells that have a drive of gas that will drive the gas to the oil wells or if the information were porous and permeable in this area it might be that you could use a gas drive from the crest of the structure expanding the gas cap.

Q. If you did that would you have to drill a well?

A. Yes, sir.

Q. And about where would you drill it?

A. Well, in order to get any oil off of Tract 1, it will be necessary to drill a well along the south line of a lease on the east side.

Q. Then you would inject the gas into that well, would you?

A. Not that well, but to drill the well to get oil.

Q. Where would you inject the gas?

A. The gas could be injected if you have the proper information and porosity in the formation, the gas could be injected up-structure in the gas cap.

Q. Which is up-structure in relation to Tracts 1, 2 and 3?

[fol. 1361] A. East and south.

Q. And you say that you drilled a gas well there up-structure?

A. There is a well up-structure at this time known as Stephens-Wilhite.

Q. And it is your opinion that gas could be injected in the Wilhite well that could be produced oil from the well bore along the south line on the west line of Tract No. 1, is that your testimony?

A. On the assumption that there is porosity, permeability, my testimony is that the zone through here (indicating) is very poor.

Q. I understand that that will be the method that will necessarily be pursued through the attempt to get the oil by gas injection.

A. That is correct.

Q. And the other use by water injection?

A. That is correct.

Q. Is there any other method by secondary recovery that could be used in a unitization operation as that?

A. That constitutes the two methods.

Q. The two methods will cover it?

A. Yes.

Q. Now will it, in your opinion, be practical to use such methods as to recovery as what oil that lies under these tracts?

[fol. 1362] A. I don't think it will be practical.

Q. Why?

A. Only the drilling of a well will actually tell you what you have from all indications from this tract No. 1, there is a dry hole south of the No. 1 tract and there is a possibility of obtaining production such as you would want to repressure it or obtain oil from it by commercial quantities or for maintenance are rather remote from these particular tacts.

[fol. 1363] Q. Now, I'll call you attention to the Southeast portion of the reservoir and particularly tracts 67, 68, 69 and 70, as shown on said Exhibit?

A. 67, 68, 69 and 70?

Q. Yes, and now will you outline to the Commission the method which would or could be used in connection with Unit Operations to produce the oil which may be, if any oil does, underlie those tracts?

A. On Exhibit 54-R I'll indicate the numbers of the tracts as used in Exhibit 1 in this part of the field. Under Unit Operations gas might be injected in the Anderson-Prichard-Davis 1-A or a gas well might be drilled in the center of Section 6-5N-9W and an oil well could be drilled in the Northwest of the Southeast of the Southeast quarter of Section 6-5N-9W on tract No. 70.

Q. Now, then, what would you do in order to produce the oil after you drilled those two wells?

A. The gas would be injected into the gas well drilled in the center of Section 6 and the oil well could be produced.

Q. And would that then force the oil into the bore of the oil well you propose to drill on Tract No. 70?

A. Yes.

Q. Is there any other way to get, any other way or method

that could be used in connection with any operation to recover the oil, if there is any oil under those tracts?

[fol. 1364] A. Yes, there could be a row of water wells drilled along the South line of the lease, Tracts 69 and 70 and that could be,—they could be used for water injection and oil wells could be drilled on up structure.

Q. And by that method you would inject water into the water wells by forcing the oil up structure into the bore of the oil wells?

A. Yes.

Q. Now, in your opinion, is there sufficient amount of oil underlying Tracts described wherein such operations as you have described?

A. No.

Q. Now, you have studied the Plan submitted by the Applicant for injection, for Unitization, in this manner, have you?

A. Yes.

Q. And after having given the plan careful study do you find any indication in the Plan as to the method or as to any methods that the Applicants propose to use to recover the oil from Tracts 67, 68, 69 and 70 and Tracts 1, 2 and 3, that we have been discussing?

A. There is no specific mention of how they would do that, but it is left up to the discretion of the Unit operator and the Operating Committee.

Q. Are you able to advise the Commission, from examination of the Plan, are the Applicants proposing to obtain [fol. 1365] possession of the oil under those tracts, if there is any oil there?

A. Well, in the Plan, the Operating Committee, Section II Paragraph F, the Operating Committee determines from time to time the rate at which, and the wells from which the Unit production shall be produced, in conformity with good Engineering practices and any applicable conservation laws or regulations, and that is probably broad enough to allow that to be done.

Q. Would it be necessary for an Operator to use discretion in attempting to find a method to use in attempting to obtain possession of the oil lying under those Tracts under discussion, if any oil is there?

A. Well, all matters relating to the recovery of oil, I would say, would require the use of discretion.

Q. The use of discretion is necessary in determining the wells should be drilled?

A. Yes.

Q. And whether to use water or gas injection?

A. Yes.

Q. And are those methods of propriety in the production of oil and gas?

A. Yes sir, I believe they are.

Q. Are those methods set out in the Plan presented?

A. They are not.

Q. Now, Mr. Keplinger, I believe you testified awhile ago [fol. 1366] that in order to fully develop the various segments, and common sources of supply in the Medrano pool, that in your opinion, the wells should be drilled in the oil area on a 10-acre spacing in some sources of supply, and on 20-acre spacing in other common sources of supply,—is that correct?

A. That's correct.

Q. Now, in connection with your testimony, I'll ask you to state if you know whether or not the cost of developing fully all of the segments where common sources of supply in the Medrano pool would be substantially and materially more than the cost of Unit Operation would be as proposed by the Applicants contemplating the drilling of eight new wells and the installation of a Compressor Plant and other activities to which they have testified?

A. I haven't made a study of the cost for the complete development, but I rather suspect that it might be more than what has been set out in the Plan of Unitization, of eight wells, or seven wells,—I don't know.

Q. In the event and assuming that the various common sources of supply in the Medrano pool are fully developed on 10-acre spacing and 20-acre spacing Plan at the present gas allowable or a similar allowable is maintained, how much recovery of the oil in place would you expect to obtain under these operations?

A. Approximately 50%.

Q. And over what period of time, assuming that the same [fol. 1367] allowable on the oil wells is maintained as is now

in force and that the new wells would have the same allowable, 200 barrels per day per well in accordance with the present order?

A. At the present time the pool is approximately 5200 barrels of oil per day, or 5000 and additional drilling would increase that,—something probably in the neighborhood of ten years, something like that.

Q. Now, then, under the Applicants plan of Unitization, assuming that seven or eight additional wells are drilled and that the pressure is maintained and a re-cycling plan is set up, how long would be, in your opinion, how long would it take the production,—to produce all the producible oil in the various common sources of supply in the Medrano sand?

A. I do not know, but as set out in their Engineering Report, Exhibit 71, Table 6, it indicates the total of injected gas, under some hypothetical condition, in segment "A" would be expected to have gas injected into it for twenty-one years, segment "B" twenty years, segment "C" twenty-one and segment "D" twenty-one years,—segment "E" nine years.

Q. Well, I'll ask you this,—if from the Engineer's Report whether or not it would be your opinion that the time required under the Unitization Plan of Production would be twenty years?

A. That is the approximate figure indicated.

Q. What percentage of the oil could be produced under [fol. 1368] a properly managed Unitization Plan over that period of years, in your opinion?

A. I haven't given that too much thought, although the Plan indicates in the neighborhood of 50%, in the Engineer's Report.

Q. Now, you have examined the Division of the Oil and Gas among the persons entitled thereto as made by the Applicants in this matter, have you not?

A. Yes, I have examined it.

Q. Have you made a careful study of that?

A. On part of it I have.

Q. On part of it you have?

A. Yes.

Q. Do you have an opinion as to whether or not that divi-

sion is fair and equitable to the parties and persons entitled to the oil and gas in the pool?

A. The ones I have examined very closely indicate that there has been inequities, that there have been inequities.

Q. Is it your opinion that the division of oil and gas in the pool is inequitable, as disclosed by the Plan?

A. Yes.

Q. Now, Mr. Keplinger, you have used the word "field," in your testimony regarding the pool under consideration, and you have spoken of the Medrano sand common source of supply in the West Cement field, and you have spoken—strike that question.

Q. Please state to the Commission what is usually under-
[fol. 1369] stood by you and members of the Engineering Fraternity and oil fraternity by the use of the word, "field," in discussing oil fields and oil and gas business?

A. I don't know whether there has been any common acceptance of the word, "field." In my opinion and understanding it probably represents an area on the surface, which is productive of all oil and gas underlying that surface and in that manner the field would include an area under which oil and gas could be or is being produced,

Mr. Williams: I want to move that the answer be stricken for the reason that he testifies that he didn't know what would be in common acceptance the meaning of the word. We object to what it means to any particular individual.

Chairman Bond: Sustained, unless you want to qualify him.

Q. Have you read books and newspapers in which the word, "field," and "West Cement field," have been used?

A. Yes, I have.

Q. Have you discussed the West Cement field and other oil fields with lawyers and other people engaged in the conduct of the oil and gas business?

A. Yes sir.

Q. And from your reading and conversation and what you have heard, have you formed any understanding of the
[fol. 1370] meaning of the word, "field," as known and used in connection with oil and gas fields?

Mr. Williams: Objected to,—the question is whether he understands the common and accepted meaning.

Chairman Bond: Sustained, unless he knows what is the commonly accepted meaning.

Q. Well, do you know what the commonly accepted meaning is?

Mr. Williams: He said he didn't.

Chairman Bond: He may answer whether he knows.

A. All I know is what it means to me and that is it has been——

Q. Well, do you have a professional opinion as a person in the oil industry, as to what it means to the general public and to the oil industry? Do you have a personal opinion about the matter?

A. Yes sir.

Q. And do you also have a professional opinion about it?

A. Yes.

Q. What is that opinion?

Mr. Williams: We renew our objections because the definition——

Chairman Bond: He may give his professional opinion and if it doesn't conform the Commission may determine whether he is qualified. His personal opinion doesn't [fol. 1371] amount to anything to the Commission, but his professional opinion would.

Q. Well, give your professional opinion, what is the meaning of the term, "field," as you,—used in oil and gas parlance?

A. "field," would mean a surface area under which oil and gas may be produced, such as the Seminole field, or the other fields,—there are several producing zones and those in those producing zones constitute a common source of supply, but as the gilcrease sand is productive the Cromwell sand, the Hunton-Limestone, the Wilcox formation, and those various common sources of supply lying under the same surface may be designated as the Seminole field.

Q. Then, pursuant to that definition, would the West Cement field cover or not the Medrano horizon which is, in your opinion, divided into several different common

sources of supply as well as numerous other sands, and horizons which produce oil and gas.

A. Yes sir.

[fol. 1372] MR. KEPLINGER, is called for further examination, as follows:

Examination by Mr. Adams:

Q. Mr. Keplinger, do you have in your possession a copy of the application of the Petroleum Administrator for War, dated March 21, 1944 made by Mr. C. P. Dimmit, Vice-President in charge of Production of the Phillips Petroleum Company, with relation to the Medrano area of the West Cement field, Caddo County, Oklahoma?

A. I have.

Q. I'll hand you Exhibit 9? and ask you to state if that is a copy of the instrument to which I have just referred?

A. Yes, it is.

Q. Is Mr. Dimmit, the Superior, under whom Mr. Kaveler works?

Judge Brown: I would just like to know is this is Redirect examination of his own witness, I want to know the status of the case,—is this further direct testimony?

Mr. Adams: Yes.

A. Mr. C. P. Dimmit is Vice-President of the Phillips Petroleum Company and Mr. Kaveler is one of his assistants.

Mr. Williams: Mr. Witness, do you know Mr. Dimmit signed this instrument,—do you know his personal signature?

Mr. Adams: Let me ask counsel if they deny that Mr. [fol. 1373] Dimmit signed this application.

Mr. Williams: We don't know.

By the witness:

A. I believe that is his signature, although it might not be. I have seen his signature before; this instrument came to the Palmer Oil Corporation and came with this signature attached, "C. P. Dimmit."

Mr. Williams: Were you employed by the Palmer Oil Corporation when that was received?

A. No sir.

By Mr. Williams:

Q. How do you know it was sent to the Palmer Oil Corporation?

Mr. Adams: We object to this——

Mr. Williams: And we object to this introduction,—it hasn't been identified.

Chairman Bond: We don't think the Commission should admit the instrument on the belief that it is his signature.

Mr. Adams: All right, if they want to take that position, we'll bring Mr. Dimmit here,—we want to take up later the offer of this Exhibit.

Mr. Williams: I have never seen that instrument before, until just now.

Chairman Bond: The Commission will suggest that you gentlemen read and examine the Exhibit carefully and if you are going to object to it on the grounds of competency [fol. 1374] and materiality and relevancy,—if it is incompetent, irrelevant and immaterial, it wouldn't be necessary to bring him here.

Mr. Williams: I believe we'll object as incompetent, irrelevant and immaterial to any issue in this proceeding.

Mr. Adams: Well, we have one more witness, very briefly, in behalf of the Palmer Oil Corporation and that witness can't be here,—we understood that this case will go over until Tuesday and we'll have a witness here then.

Chairman Bond: (addressing Mr. Williams) Do you gentlemen want to offer any rebuttal testimony before the Protestants rest.

Mr. Williams: No sir.

Mr. Reford Bond Jr.: I wait to make the statement,—my client wasn't here at the beginning of this hearing because of,—because at that time we did not know what the Applicant,—just what the Applicant intended to do by way of operation of the field. We believe it would serve the Commission well if we were permitted to make a statement of the condition, statement of the objections with,—which [fols. 1375-1376] these Protestants offered to the Plan.

Chairman Bond: The Commission will hear you.

(Reporter's Note: At this time Mr. Reford Bond Jr. made the following statement:)

[fol. 1377] Chairman Bond: Gentlemen, you may proceed.

Whereupon, A. L. Davis, of lawful age, being first duly sworn, testified as follows, to-wit:

Witness examined by Reford Bond, Jr.:

Q. Are you A. L. Davis?

A. Yes.

Q. And President of the Caddo-Grady County Royalty Association?

Q. Yes, I am.

Q. And you are conducting this case in chief for the royalty owners?

A. Yes, I am.

Q. Do you know the meaning of the word "field" used in connection with oil and gas in common parliance?

A. I believe I do.

Q. Well, do you?

A. Yes, I do.

Q. What is the meaning of the word "field" used in connection with oil and gas in common parliance?

A. The word "field" is the term, it covers any area where the oil is discovered and all the gas zones under that area under one head.

Q. Now, Mr. Davis, I will hand you what has been marked as Exhibit 93, and ask you to state that that is. [fol. 1378] A. It is the daily paper, dated September 17th, the Anadarko Daily News, September 17, 1939.

Q. Does that paper use the term "field" in connection with oil and gas in any news items contained in the paper?

A. Yes, here is an article in which it shows here is the largest, world's largest gas well.

Q. Will you read that part of the article that used the word "field."

A. "World's Largest Gas Well is in Cement Field."

Q. Then will you read to the Commission the rest of the article so that the Commission may know what sand the gas wells are producing from.

Reporter's Note: Mr. Davis reads article from Anadarko Daily News.

[fol. 1379] A. "World's Biggest Gas Well is in Cement Field:

Described in a recent issue of the Petroleum Engineer by Roy W. Parker, of the Oklahoma Natural Gas Company, as the largest gas well in the world, the Magnolia Petroleum Co. No. 10 Niles in Section 36-6-10, on the west side of the Cement oil area, has increased its potential flow to 640,000,000 cubic feet open flow gauged by the back-pressure method.

Drilled in several months ago during a flurry in the adjacent area, the company's No. 10 Niles had an initial open flow of dry gas measured at 224,000,000 cubic feet per day with a rock pressure of 1,650 pounds per square inch. Production is coming from a sand below 4,200 feet, it was explained.

Ray Stephens, Inc. recently drilled in a well in Section 27-6-10, which gauged 285,000,000 cubic feet of gas, with some oil, but the flow was said to have been illed and materially reduced by later operations. It was not referred to in Parker's story, because his account dealt with 'recent progress in natural gas transportation,' of the Oklahoma Natural gas lines taking supplies from the Chickasha and Cement fields, as well as other important areas throughout the country.

[fol. 1380] The company's No. 1 Hedlund in Section 11-5-9 in the east field, Parker said, tested 161,700,000 cubic feet per day at a rock pressure of 2,025 pounds per square inch. It was drilled around 4200 feet, and several being drilled to a depth of 5,000 feet and greater, are showing good results which presage a trend to deeper drilling in areas where shallow sands have been exhausted."

Q. Now, Mr. Davis, tell the Commission whether or not the Chickasha gas field contains more than one productive horizon.

A. It does.

Q. And that is also true of the east and west Cement field?

A. It is.

Q. We offer that part of Exhibit 93, showing the heading of the paper, the date and the article on the front page in column 4, headed, "World's Biggest Gas Well is in Cement Field."

Chairman Bond: Received.

Q. Mr. Witness, I hand you exhibit 94 and ask you to state what that is.

A. Daily paper known as the Chickasha Daily Express, dated September 7, 1938, displaying an article and map headed, "New Map of Cement Oil Field Shows Important Operations in two Areas."

Q. Will you read that part of the article that uses the word "Field" in connection with oil and gas?

[fol. 1381] A. "Above is a current map of the Cement Oil Field showing locations in the centers of important operations in the eastern and western sectors of the area. The past six months has seen completion of a dozen oil producers and at least three large gas wells. The focal point of interest today is just southeast of the town of Cement where the Magnolia recently completed its big producers in the Rowe sand on the Pau Kune lease, NE. NE. NE of 10-5-9, and is now drilling two offsets. Since the Pau Kune was completed for an estimated 1,800 barrels or better, the Ohio has increased production of wells on the Lackey lease to the southeast by perforating into the Rowe sand. The Stephens No. 3 Funk on the eastern border of the field is drilling ahead. New development led by Palmer in Sections 34 and 35-6-10 has paved the way for further activity, while two tests are being awaited in Section 27-6-10." This map shows both the east and west area of the cement field.

Q. We offer Exhibit 94 insofar as it shows the name of the paper, the date of the article and map on Page 6, Section C, entitled, "The Map of Cement Oil Field Shows Important Operations in Two Areas."

Chairman Bond: Received.

Q. Mr. Davis, do you have with you any Schlumberger logs which discloses the use of the word "field" in the oil and gas industry?

[fols. 1382-1383] A. I do.

Commissioner Jones: The Commission will recess until 1:30.

[fol. 1384] Chairman Bond: Gentlemen, you may proceed.

A. L. Davis recalled to the stand.

Reford Bond, Jr. examines the witness:

Q. I hand you, Mr. Davis, what has been marked Exhibits 95 to 105, and ask you to state to the Commission what these exhibits are.

A. These are electric logs of various wells in the Cement field.

Q. Are the various logs identified on the face of the log and the heading of the log?

A. They are.

Q. I will ask you to read to the Commission the heading of the first log insofar as it exemplifies the use of the word "field" used in connection with oil and gas.

A. It indicates that it is the Cement field, it gives the name of the company, the well number and date and field and that it's drilled in and states in the Cement field.

Q. The electric log applies to a particular well at a particular location in some particular field, is that correct?

A. It does.

Q. Will you read the heading of the log marked Exhibit 95 to the Commission?

Mr. Williams: Did this witness run these logs?

Reford Bond, Jr. continues with the witness:

A. Mr. Davis, from what source did you procure the [fol. 1385] exhibit that you are testifying about?

A. Some of them I acquired them from the companies themselves and some I borrowed.

Q. They are regular electric logs, that is, they appear to be regular electric logs made by regular electric logging companies that make them, is that correct?

A. It's true, most of them were made by the Homberger, the well servicing corporation.

Q. You obtained them.

Mr. Williams: Did this witness do anything with respect to it other than bring them here, if that is true, I don't see that the evidence used is any more competent.

Reford Bond, Jr.: If the Commission please, we have no objection to his asking questions, we will offer them as soon as I can get enough of the witness's testimony about

them, about the production of them and we will produce these as evidence to the Commission.

Mr. Williams: I am willing for them to go in, it's not competent for him to be the one to offer them.

Reford Bond, Jr. continues with the witness:

Q. Will you read the heading of Exhibit 95 to the Commission.

A. "Homberger Surveying Company Engineers, Well No. 1, Field Cement, Survey being No. 59, Section 3,—59, County, Caddo, State Oklahoma."

[fol. 1386] Q. Now, will you read the heading on Exhibit 96?

A. "Homberger Log Well Servicing Corporation Company, Field Cement field, County, Caddo County, State of Oklahoma."

Q. Now, Mr. Davis, I will ask you to examine Exhibits 97 to 105, inclusive and state to the Commission whether or not each one of these electric logs contain the phraseology "Cement Field or West Cement Field" describing the location of the particular wells from which these logs were made.

Mr. Williams: We will admit that they speak for themselves.

A. No. 97 and 98 are 1, Walker A, and 2, Walker A west of Cement Field, Section 1-5, and the remainder of them say Cement field and the others say West Cement field.

Q. Now then, the particular wells described in Exhibits 95 to 105, inclusive, are they not different sands and different producing zones in the Cement field and West Cement field.

A. They are in different zones.

Q. Do these facts appear from this exhibit themselves?

A. It does.

Q. We offer that part of Exhibit 95 to 105, inclusive, of which shows the name of the pool, its location, the sand encountered in the well for a production showing the use and meaning of the word, "field."

Chairman Bond: Received.

[fol. 1387] Q. If the Commission please, the Exhibits are 95 to 103 instead of 105 and we will let the record show that these are the exhibits that were asked about and also be offered.

Chairman Bond: Let the record be corrected.

Q. Mr. Davis, I hand you what has been marked as Exhibit 104 and ask you to state what that proposes to be.

A. It is an application in the matter of Walter T. Pounds, Conservation Officer, Corporation Commission, the amendment of rules and regulations of Medrano sand and allocation from the production field and lower Charleston of Chickasha, for October and November of 1943 or one or two of said months, in C.D. 865.

Q. Does that show when the application was filed?

A. Filed September 15, 1943.

Q. With the Corporation Commission in the State of Oklahoma?

A. Yes, sir.

Q. Now, if the Commission please, probably this witness is not the proper witness to identify a copy of the application before the Honorable Commission.

Mr. Williams: We will admit it, it's a copy of the application on file of the Commission's records.

Reford Bond, Jr.: We will offer Exhibit 104 for the purpose of showing the use of the word "field" in the application filed for rules and regulations of the West Cement field.

Chairman Bond: Very well.

[fol. 1388] Reford Bond, Jr. continues with the witness:

Q. Mr. Davis, I hand you what has been marked Exhibit 105 and ask you to state to the Commission what that is.

A. Report of the Commission under Case C.D. 865, Order No. 16,683, in the matter of the application of Walker T. Pounds for amendment of rules and regulations of Medrano sand, etc., for the months of October and November, 1943.

Q. Does that order show when it was filed with the Corporation Commission?

A. Done and performed by the Corporation Commission on the 13th of October, 1943.

Q. That is the date, does it show on the face of it when it was filed?

Mr. Williams: That order is already in evidence.

Reford Bond, Jr. continues with the witness:

Q. We offer Exhibit 105 insofar as it exemplifies and uses the word "field" in connection with oil and gas showing the meaning of the word "field" in the order of the Corporation Commission of the State of Oklahoma, in connection with the Medrano sand in the West Cement field.

Chairman Bond: Received

Q. That is all.

Mr. Williams: No cross-examination.

Witness excused.

[fol. 1389] Mark Adams: I offer exhibit 92 which was offered this morning, having been sent out under the signature of Mr. C. D. Dimmet, Vice President of Phillips Petroleum Company, it's an application of petroleum and administrator of war, exception PAO No. 11, West Cement Medrano Oil pool.

Chairman Bond: Is that the one we had the question about the identification of the signature?

Mr. Williams: We will admit that it was sent to whom it is addressed over the signature Mr. C. D. Dimmet, however we don't know that it was his signature, but we will accept as Phillips Petroleum Company sent it out.

Mr. Williams: We would like to object to this because of it being incompetent, irrelevant and immaterial.

Chairman Bond: Very well, we will hear from you.

Judge Brown: It is hearsay on the part of all except Phillips and anyone testifying, we want to say it's immaterial as to us, Anderson-Prichard.

Mr. Williams: If he testified and they wanted to impeach his testimony and he,—it's improper and he hasn't and it's merely picked up and introduced.

Chairman Bond: You may proceed.

Mark Adams: "In accordance with paragraph (1) of [fol. 1390] Petroleum Administrative Order No. 11, as

amended, a P.A.W. Form 3 application is hereby submitted, requesting an exception to said order, to permit additional development in the Medrano Oil Sand of the West Cement Field, Caddo County, Oklahoma.

1. Name and address of applicant.

   Phillips Petroleum Company
   Bartlesville, Oklahoma

2. Location of proposed operations:

   This application relates to the Medrano Sand oil reservoir of the West Cement Field, Caddo County, Oklahoma. The limits of Medrano sand oil production are now reasonably well defined in most of the field except in that area to the southeast of the NW/4 Section 1-5N-10W. The data available from present development does not establish the stratigraphy of the southeast end of the reservoir. Attached hereto and marked Exhibit A, is a map which shows the area covered by this application outlined in red.

3. Nature and description of proposed operations:

   Applicant proposes that the present drilling restrictions applicable to the West Cement Medrano Sand oil reservoir, under the exception to P.A.O. No. 11, Case No. 4803, be modified so as to allow a 20 acre density flexible plan of development. With this objective in mind, it is requested that the present pool-wide order be revised sufficiently to permit the drilling of a maximum of two oil wells on each quarter-quarter section (40 acres), and with only the following limitations being placed on the location of the wells:

   (a) Each such well to be at least 330' from every lease line, property line, or subdivision line which separates unconsolidated property interests and from every boundary of the quarter-quarter section upon which such well is located, and

   (b) Each such well be drilled at least 660' from every other drilling or producible Medrano Sand oil well.

[fol. 1391] This plan of spacing will naturally give the operator much latitude in the location of wells fro

the establishment of the most effective drainage pattern on each lease. However, it is felt that even with these liberal restrictions, the average operator will probably confine the actual location of his wells to the approximate centers of the ten acre quarters contained in each 40-acre unit, as illustrated on Exhibit A.

4. Point of exception:

The present exception under P.A.O.-11, case No. 4803, dated August 19, 1943, provided for the drilling of only one well to each quarter-quarter section in the Medrano Sand oil reservoir with three optional locations permitted as follows:

(A) Within 100′ of the center of the NE 10 acres, or
(B) Within 100′ of the center of the SW 10 acres, or
(C) Within 150′ of the center of a quarter-quarter section.

A further restriction in the present order contrary to the proposal, as set out in 3 above, is the requirement that each well must be at least 900′ from every other drilling or producible Medrano Sand oil well spudded subsequent to the effective date of the order.

5. Lease and Reservoir data:

On August 4, 1943, a group of interested operators, including applicant, filed a joint application (case No. 4803) with the Petroleum Administration of War. At that time all the available geological and reservoir information was presented. Since then, however, much additional information has been revealed by subsequent drilling. Such supplemental data is now presented on Exhibits A, B, C, and D.

The gas/oil contact is now considered to be approximately minus 4000′ while the oil/water contact has been established in the Amerada #1 Hartshorn (NE of Section 2-5N-10W) at 4660-70 feet and the Gulf #4 Sherritt (NE of Section 33-6N-10W) at 4706′. From this evidence, Exhibit A shows the boundary lines of the anticipated oil productive area and also a representative cross-section illustrating the relative

position of gas, oil and water. The two inside con- [fol. 1392] tours represents the extent of the reservoir that is completely saturated with oil from the top to the base of the Medrano Sand section. It should be noted that the fully saturated oil band only averages about one fourth mile in width and in this type reservoir it is obvious that wells must be located in this relatively narrow oil column for the most efficient operation. In section 34-6N-10W there is nearly 200' of saturated oil sand, but the sand thins out both to the east and west of this point. At present, there is no evidence of an effective water drive.

At present there are 20 completed producers and 5 drilling wells in the Medrano Oil Pool. In this four segments covered by this application it is estimated that 984 acres are proven for oil production and Exhibit E, attached, shows an estimate of oil reserves based on a flexible 20-acre plan of development. It is the applicant's firm belief that ultimate recoveries will be considerably smaller than the amount set out on Exhibit E if present restrictions remain in effect.

7. Supporting data:

The reasons for 20-acre well densities and greater flexibility in the pattern of development of this reservoir were presented in the original application, case No. 4803, but for added emphasis, the following points are stressed:

(a) That estimated average recoveries of 29,100 barrels per acre (Exhibit E) amply justifies 20-acre development.

(b) That the Medrano Sand Oil Zone in the West Cement field is very unusual and different structurally from most other pools in that it is a narrow oil column around the edge of a large gas cap on a steep dipping formation.

(c) That it is well recognized that on such a structure, it is not only desirable but is also necessary to efficient and economical development that great flexibility, in preference to a uniform surface

pattern of spacing, will result in more proper development and in better drainage.

(d) That the peculiarity of the structure in the Me-[fol. 1393] drano Sand Oil Zone presents a problem quite similar to the Piercement-Dome structures of the Gulf Coast Region where the P.A.W. has properly seen fit to grant much greater flexibility than is afforded under the present rules in the Medrano Sand Oil Zone. Like flexibility in the location of wells in this pool will doubtless eliminate the drilling of many dry or non-commercial wells and will certainly result in a greater ultimate recovery of oil.

(e) That the program here suggested and recommended will, in the opinion of the applicant, definitely insure the most effective utilization of critical materials and will result in a greater amount of much needed crude oil being produced in the immediate future, and will also promote a greater ultimate recovery from the reservoir.

A copy of this application is being mailed to each interested operator with a request that they individually express to P.A.W. their position on this application.

It is submitted that the proposed development is necessary and appropriate in the public interest and to promote the war effort. Applicant, therefore, respectfully requests authorization to use material required for developing the West Cement Medrano Oil Pool as outlined in Section 3 above.

Certification

The undersigned hereby certifies to the Petroleum Administrator of War that:

(a) The foregoing application has been executed on behalf of and by authority of the above named applicant;

(b) The facts stated in the foregoing application are, to the best of my knowledge and belief, true and correct;

(c) If the authorization hereby applied for is granted, use of material existing in stock or obtained by means of any applicable allotment number or preference rating will be made solely in accord-
[fol. 1394] ance with the terms of the authorization which has been granted, and with the provisions of Petroleum Administrative Order No. 11, as amended from time to time.

Yours very truly, /S/C. P. Dimit; C. P. Dimit, Vice President (Signed) In charge of Production."

[fol. 1395] B. T. MURPHREE, called as a witness, being first duly sworn, testified as follows:

Direct examination.

By Mr. Reford Bond Jr.:

Q. State your name?
A. B. T. Murphree.
Q. Where do you live?
A. 2816 N. W. 43rd Street, Oklahoma City.
Q. What is your occupation?
A. I am a Petroleum Engineer.
Q. Will you briefly state to the Commission your qualifications as such, including your experience?
A. I received a B.S. degree, as Petroleum Engineer from the University of Oklahoma, in 1935. I am studying for M.S. degree in Petroleum Engineering now and I lack six hours of having it completed. I spent twenty-one years,—maybe I should make that more specific,—about 18 years in the employ of Phillips Petroleum Company, as Department Engineer and various other duties. Two years I was with the Wilcox——,—two years I was Associate Petroleum Engineer in the Billings pool. I don't have the *seeince* qualifications of Mr. Kaveler, but I do have a few degrees to support me.
Q. Those are your qualifications, Mr. Murphree?
A. Yes.

Q. Have you studied the Plan of Unitization offered by [fol. 1396] the Applicants here in this matter?

A. I have.

Q. And have you studied the Engineering Report? In connection, upon which the Plan is based, and also the evidence which has been produced by the Applicant and Protestants at this hearing?

A. I have.

Q. State the extent of the study, what study have you made of these matters as to whether or not it has been careful or casual?

A. Well,—for some four weeks here in Court listening to the proceedings, I have attended all sessions of it,—I have taken all the Reports which Phillips, Gulf and the various companies have compiled and have been kind enough to let us have, and have studied them carefully. Previous to that I have done some work in the employ of Phillips, in the pool prior to the discovery of oil.

Q. You are familiar with the Medrano sand?

A. The Medrano sand of the West Cement pool, yes.

Q. And you have made a study of that pool?

A. Yes, I have.

Q. From the study that you have made of the Plan of Unitization proposed by the Applicants, have you arrived at any opinion as to the equitableness of the division of the oil and gas between the persons entitled thereto as set forth [fol. 1397] as part of the Plan?

A. I have.

Q. Is the Plan in your opinion equitable, or not?

A. There are some inequities in the Plan and I believe,—well, I believe there are some inequities in the Plan.

Q. Yes, I will ask you whether or not those inequities can be demonstrated and exhibited by showing the amount of oil and gas that will be received by the various lessors and protestants, under the present methods of operations and what they would receive under the operations as proposed by the Plan?

A. Since,—well, under the law of capture I believe those inequities can be shown by that proceedure.

Q. Now, I'll call your attention to Tract No. 3, Mr. Kit C. Farwell, being one of the lessors or royalty owners in

that tract, and ask you to state the approximate amount of money which Mr. Farwell should have received for the oil and gas produced from that tract for the months of April and May, 1947?

A. These figures we have compiled here are for the month of April and on Tract 3, the Brown lease, there is no well or not production on that lease as of the present time, but it hasn't received any money under the Unit plan, but would receive approximately $32.00 per month. Those figures are based on $2.00 per barrel for oil and 5c per thousand for gas, assuming that under the Unit, if the Unit is formed, we will have an allowable of 5200 per day, figuring thirty days a month.

[fol. 1398] Q. From what do you take the figure of 5200?

A. That's the figure suggested in this Unit Plan.

Q. Offered by the Applicant?

A. Yes. Of course, under the Plan offered by the Applicants there will be no gas runs, at all, for the first number of years.

Q. Under the Plan offered by the Applicant there will be no gas runs at all for the first number of years, is that correct, so far as the Plan discloses, that they have made no provision for the taking of any gas for a few years?

A. That is as I understand the plan, to keep the gas on the property.

Q. Now, I'll call your attention to Tract No. 14, which is the Gulf-Sherritt lease in which one of the Protestants (name) owns a royalty interest, and ask you how much is shown to be the amount, in dollars and cents, approximately of the oil and gas produced in April or May, 1947 would be 1/8 royalty interest?

A. In April the lease produced 20,143 barrels.

Q. What source did you obtain that figure from?

A. From the Commission Report put out in June, that's the April figure.

Q. Do you have the report for May?

A. Yes.

Q. This Report has been marked Exhibit 106,—no gas [fol. 1399] was taken from that lease in April or May, is that correct?

A. There is none shown of record.

Q. Did you examine the record of the Corporation Commission to ascertain that fact?

A. The Corporation Commission records.

Q. The amount of the gas produced from the Medrano sand for the month of April and which shows no gas sold from the Sherritt lease?

A. That's right.

Q. Now, then, proceed and tell the Commission how much money was received and how much was produced as 1/8 royalty for the month of April?

A. On the Gulf-Sherritt lease the royalty owner received $5099.00,—under the Unit Plan they would receive $5113.00.

Q. Now, I'll call your attention to Tract No. 15, being the Amerada-Beemer, under which the Protestants Anita Beemer owns a royalty interest, and ask you to tell the Commission how much she did or should have received as 1/8 royalty for the month of April, 1947?

A. $704.00 as 1/8 royalty.

Q. That information also was taken from the records of the Corporation Commission?

A. Yes.

Q. How much would that interest have been under the Unit Proposed Plan?

A. $438.00.

[fol. 1400] Q. That's a reduction of how much?

A. $256.00,—no, $266.00.

Q. More or less?

A. She would have received less.

Q. Is that one of the reasons why you say that the Plan, in your opinion, is not equitable?

A. Yes, that's one of them.

Q. I'll call your attention to Tract No. 16, under which the Protestant, Kit C. Farwell owns a royalty interest and ask you to state to the Commission how much, if any, oil and gas would be the royalty interest for the month of April or May?

A. That's the Stephens-Farwell lease, and it only produces gas,—the royalty owners should receive $351.00 during April, for gas under Tract 16.

Q. Under the Unit Plan it would be what?

A. $130.00.

Q. From what source did you obtain this figure of gas production?

A. The Corporation Commission, from their files maintained as a record of the production. I don't think they publish that information but it is in their files.

Q. Is that where you obtained that information?

A. Yes.

Mr. Reford Bond Jr.: Now, if Counsel will so stipulate, we will not bring in the Corporation Commission records, [fol. 1401] but allow Mr. Murphree to state what they show,—However, if Counsel so desires we will bring in the records.

Mr. Williams: We'll take what Mr. Murphree says as correct.

Q. Is that based on the figures of the Corporation Commission as to the amount of gas produced, or do they have the figures in money, the royalty owner receives.

A. I took the gas production and multiplied it by 5c,—the records don't have the money. According to the records——

Q. According to the records it was the sale of gas?

A. That's right.

Q. Then it was actually sold?

A. Yes.

Mr. Williams: Do they take the allowable actually run?

A. Yes, this was the run figure, 156,113.

Q. Have you testified the 1/8 royalty would receive under the Plan for this oil?

A. Yes.

Q. Now, I'll call your attention to Tract No. 17, which is the Phillips Petroleum-Farwell and in which the Protestant, Kit C. Farwell owns 1/8, and ask you what was the amount shown by the report for the month of April, 1947?

A. That tract 17?

Q. Yes.

[fol. 1402] A. Stephens Petroleum-Farwell—that's tract No. 17 is Sunray.

Q. I'll call your attention to Tract No. 72, in which Protestant Kit C. Farwell owns part of the 1/8 royalty and ask you state how much 1.8 royalty amounted to in dollars and cents for April or May?

A. I have 72 and tract 16 in the same set-up, however, the only gas well, the only producing well is on tract 16,—tract 16 and 72 were taken together in this Unit Plan.

Q. Tracts 16, 17 and 72 are all taken together, under your testimony, is that correct?

A. That's correct, as these figures have all been set before the Tract 16.

Q. Now, in arriving at the dollar and cents for the amount produced, what figures do you use?

A. I used the $2.00 per barrel of oil.

Q. $2.00 per barrel for oil and you also used that same figure on the oil to be produced under the Plan?

A. That's right.

Q. $2.00 per barrel?

A. Yes.

Q. I'll call your attention to Tracts 19 and 20 under which the Protestant, Plummer, Florence M. Plummer, Hazel A. Plummer, Thomas O. Plummer and Virgie M. Upgrove own an interest in the 1/8 royalty, and ask you to state how much [fol. 1403] royalty under that tract was made for the month of April, 1947?

A. Under Tract 19 they received for the month of April, $1489.00,—under the Unit Plan they would receive $1595.00.

Q. Which would be an increase?

A. Yes, a little over $100.00 increase. On Tract No. 20 which is Plummer 4 & 5,—Tract No. 19 is Plummer No. 3,—on Tract No. 20, which is 4 & 5, the 1/8 interest would receive $3014.00,—under the Unit Plan they would receive $2658.00, a decrease of about $170.00.

Q. I'll call your attention to Tract No. 26, under which the Protestant, I. O. Oaks owns a part of the 1/8 royalty, and I will ask you to state from the compilation which you have testified to, how much money the 1/8 loyalty paid for April?

A. That's the Phillips-Oaks lease, the royalty interest for the Month of May, 1947 received $4374.00.

[fol. 1404] A. Under the unit plan they would receive $4,373.00, 1 dollar decrease.

Q. I call your attention to Tract No. 28 under which protested Kit Farwell and Charles T. Williand own an

interest in 1/8 royalty and ask you what it will be for April, 1947.

A. That had no gas production for April, would its interest in the unit plan it would receive $74.00 per month.

Q. I call your attention to Tracts 32 and 33 which protestant's Regina Schlitz, James A. Holland, Ben P. Holland, Ben P. Butler, and Thomas J. Butler, are interested and ask you to state what the 1/8 royalty paid for the month of April, 1947.

A. I have these two tracts broken down separately, Tract 32 is Phillips-Margaret, the royalty received, $1,488.00 for April, 1947 and would receive $1,511.00.

Q. Which is an increase of about $500.00?

A. An increase of $17.00.

Q. What about Tract 33?

A. Tract 33 is Gulf Holland, had no production for April and would receive under unit plan $22.00.

Q. I call your attention to Tract 34, which protestants Nettie Melton is interested in 1/8 royalty and ask you what royalty it is for April, 1947 in that tract.

A. It had no production and has a gas well and evidently shut in.

[fol. 1405] Q. And what would it receive under the unit plan?

A. Ultimately $10.00.

Q. If the Commission please, could we ask the witness to give the one-eighth royalty production from these various tracts in a short form without having to go into where he gets his figures, etc.

Chairman Bond: You may, you might have him state in the beginning where he gets the figures from each and every tract like the records of the Corporation Commission and ask him thereafter.

Reford Bond, Jr. continues with the witness:

Q. You have obtained the figures about which you are testifying and about which you will testify as to the one-eighth royalty of the various tracts of the proposed units from the records of the Corporation Commission, have you not, and have you multiplied all figures, oil figures, by $2.00 per barrel and the gas by 5 cents per cubic foot?

A. That is correct. All figures have been taken from the Corporation Commission records as far as April production is concerned and as to money that protestants will receive under the unit, you have reduced the oil and gas to money at $2.00 per barrel and 5 cents per cubic foot?

A. Yes, that is correct. Now calling attention to Tracts 35, 36 and 37, and protestant Mrs. Fannie McDowell owns [fol. 1406] interest in 1/8 royalty and ask you to state what that is for April.

A. There was no production in April on Tracts 35, 36, and 37.

Q. What would the 1/8 royalty be under the unit plan?

A. About $12.00 per month.

Q. I call your attention to Tract 38, J. S. Smith and J. P. McKinna, who own mineral interests and ask you to state to the Commission what the royalty interest is for April, 1947, and what it is under the plan.

A. Approximately $254 for April under the present method and about $223.00 under the unit plan, a decrease of $31.00.

Q. Is that Tract 35 or is it the three tracts?

A. It is Tract 38.

Q. I call your attention to Tract 40 under which the Protestants Eva I. Pierson, Ernest S. Pierson, Eva J. Mead, Ella Pierson Price, Clarence M. Pierson, Richard E. Pierson and Minnie E. Pierson, own an interest in the 1/8 royalty and ask you to give the figures under the April, 1947, report and under the unit plan.

A. That is the Anderson-Prichard Hayes, and evidently the well went from an oil well to a gas well and they are selling none from the well or didn't in April, 1947, under the unit plan they will receive $232 per month.

Q. Calling your attention to Tract No. 41 which is owned by the same parties listed under Tract 40, and ask you [fol. 1407] to state how much the 1/8 royalty amount to for April, 1947, and how much it is under the unit plan.

A. Tract No 41 is the Stephens-Pierson lease, there is no production from the lease in April, 1947, and under the unit plan they will receive $574 per month.

Q. I call your attention to Tract No. 44 under which the protestants Lewis L. Edwards, M. M. Davis, T. G. Gann

own 1/8 interest under the royalty, state the amount of royalty for April, 1947 and what would be received under the plan.

A. Tract No. 44, the Magnolia-Pickard, located high on the structure is not a producing well in the Medrano and received nothing for April, 1947, and interest in the unit will get approximately $2.00 per month.

Q. Tract No. 45 under which Grace E. Niles, Gay D. Davis, L. E. Davis and M. M. Davis and Eva Parker, protestants, own an interest in the 1/8 royalty and ask you to state the amount of the royalty for April, 1947 and the amount that would be received under the plan.

A. Tract 45 is Magnolia-Niles and is one gas well and received $191 for its royalty for the month of April, 1947, under the unit plan it would receive $143, a decrease of $48.00.

Q. I call your attention to Tract No. 46, under which the protestants are Oza Medrano, Moza Medrano, guardian of C. A. Medrano who own 1/8 royalty and ask you to state. [fol. 1408] what the royalty for April, 1947 is and what it would be under the plan.

A. Tract No. 46, Magnolia-Medrano produces gas and receives approximately $256 for its royalty for April, 1947, under the plan they will receive $233, approximately.

Q. Calling your attention to Tract No. 47 and 48 under which the protestant Lewis Edwards owns a 1/8 royalty and ask you to state what the royalty amounts to for April, 1947 and what it would be under the plan.

A. Tract 47 is Magnolia-L. Edwards, it is an oil producing well, it received approximately $1,275 for April, 1947; under the unit plan, they will receive approximately $923. per month, a decrease of $342.00.

Q. What about Tract 48.

A. Tract 48 is Magnolia-L. L. Edwards which received $177 for its royalty interest for the month of April, 1947, and under the unit plan would receive $726.00, and increase of about $450.00.

Q. Calling your attention to Tract No. 49, under which the protestants Lewis Edwards, Jasper Edwards, Ted R. Edwards, Josephine Welch, Clinton Edwards, Jessie M. Mullindas, Opal Coon and Frank Edwards, own one-eighth

royalty and ask you to state how much they would receive for April, 1947 and how much under the plan.

A. Is that listed as Magnolia Gregory?

Q. That is Amerada Edwards.

A. No. 59?

[fol. 1409] Q. No, 49.

A. No. 49 is Amerada-Edwards, they received approximately $1,542 for their interest in April, 1947, under the unit plan they will receive $1,384.00 or a decrease of $160.00.

Q. Calling your attention to Tract No. 51 which is the estate of Edward M. Rowe, one of the protestants, is the owner of 1/8 royalty and ask you to state how much one tract will receive in royalty for April, 1947 and how much it will receive under the plan.

A. Tract No. 51 is Magnolia-Caddo-Rowe, it is not a producing well from the Medrano, they received no royalty for April, 1947, under the plan he will receive about $200 per month.

Q. Calling your attention to Tract No. 52, under which the protestants Gracie Lindsey and O. Lindsey and C. P. Dixon own interest in 1/8 royalty and ask how much the royalty amounts to for April, 1947 and how much under the plan.

A. Tract 52 is Magnolia-Lindsey, the royalty owners received $176 approximately for their interest in April, under the unit plan they will receive $123.00.

Q. I call your attention to Tract No. 54, protestants L. A. and Marc M. Davis, who are owners of 1/8 interest and ask how much it would receive in April, 1947 and how much under the plan.

A. Tract No. 54, the Potter-Davis had no production for the month of April, 1947 and received no royalty, under [fol. 1410] the unit plan it would receive about $26.00.

Q. Is there a well on that tract?

A. That is right, a gas well.

Q. To the Medrano sand?

A. Yes, sir.

Mr. Williams: Is that well at any time producing any gas?

A. It's not sold any, but it has produced gas.

Reford Bond, Jr. continues with the witness:

Q. What was the natural flow, do you know?
A. I don't know.

Q. Calling your attention to Tract No. 55, I ask you to state how much royalty that tract paid in 1947, April, and how much it would pay under the plan.

A. Tract 55 is Rookstool-Davis, it has no producing well and received *on* royalty for April, 1947; under the plan it would receive about $13.00.

Q. I call your attention to Tracts No. 60, 61, 62 and 63, under which Mary A. Faris owns interest in 1/8 royalty and ask you to state how much was received in April, 1947 and how much under the plan.

A. Magnolia-Gingrich, which received no royalty for April and would have approximately $11.00 under the plan; Tract 61, Stanolind Gingrich, it received no royalty for [fol. 1411] April, 1947, and under the plan would receive about $1.00.

Q. What about Tract 62?

A. Tract 62 is Anderson-Prichard Davis, for the month of April, 1947, the royalty owners received about 400 dollars, under the plan they would have received about 160 dollars, a decrease of 220 dollars.

Q. What about Tract 63, that is Lloyd Noble Davis——

A. Received no royalty for April, 1947, and would receive less than $1.00 under the plan per month.

Q. That lease is a 10 acre lease, isn't it, as shown by the map marked Exhibit A of the applicant's Exhibit 1?

A. Yes, it is a 10 acre lease.

Q. And has no well on it to the Medrano sand?

A. That is right.

Q. The applicant's exhibit A shows what portion under the 10 acre lease to be included in the confines of the pool.

A. This map that I have does not have the limits of the pool on it.

Q. Will you examine Exhibit 24 and state to the Commission what portion a 10 acre lease is included in the pool.

A. There are about 2½ acres of that lease included in the geological boundaries as shown by Exhibit 24.

Q. I will ask you to state to the Commission whether you

would expect to find oil or gas sand under that particular [fol. 1412] part of the tract included in the pool.

Mr. Williams: Is this witness qualified as a geologist, I don't remember.

Reford Bond: Do you object to the question?

Mr. Williams: I just asked if he were qualified as a geologist.

Reford Bond, Jr.: If he knows, I guess he can testify; I asked him the question.

Mr. Williams: If he knows, I have no objection.

Reford Bond, Jr. continues with the witness:

Q. I suggest that you notice the iso-bacious map offered by the applicant and based the character of the sand and the thickness of the sand which underlies that portion of Tract 53 which is claimed to be in the Medrano pool.

A. It should encounter gas sand under that 2½ acres, and the gas sand, revjewing more than the information I have seen, there will be very thin, possibly—sand 5 feet.

Q. I will ask you whether or not it will have any commercial value.

A. As a nuiscance value, it probably would.

Q. *Would* do you mean by nuisance value?

A. If some Company drilled on that property in the Medrano, if the sand had enough permeability and porosity you could probably drain considerable amount of gas from [fol. 1413] off the 3 other leases in the Medrano.

Q. How much will it cost to drill?

A. $60,000 to $65,000 as of to date.

Q. What do you think will be the cost of the gas cap figured at 25 cents.

Mr. Brown: He is talking about the nuisance value, he said that if they drilled the gas that that was the well, they can drill the nuisance wells and they will recover a great deal of oil and gas.

Reford Bond, Jr.: I want to ask the question that I want to ask, and let Judge Brown ask his question later.

Chairman Bond: He may proceed.

A. Assuming that high 10 feet of tensity sand there in 2½ acres, you would have about 25 acre-feet of sand and

that sand up on that area is very tight and all along the north area is tight and has a very low permeability, so the gas under that lease may estimate less than $5,000.00.

[fol. 1414] Q. Now, I'll call your attention to Tracts 64 and 65, under which Winifred M. Prentice, now Graney, Eugene L. Prentice, Maxine Ruth Prentice, and John C. Prentice own 1/8 royalty and ask you to state what the royalty was for April, 1947 and how much it would have been under the Plan?

A. Tract 64 is the Anderson-Prichard-Prentice-A,—they received $2904.00 for the month of April, 1947 and were their interest under the Unit Plan they would receive about $1009.00 per month.

Q. What about Tract 65?

A. Let me continue this answer?

Q. Yes, go ahead.

A. That was a decrease of the royalty interest of $895.00. Now Tract No. 65 is the Anderson-Prichard-Prentice-B,—they received in royalty for April, 1947 $,—under the Unit Plan they would receive $203.00 monthly, approximately.

Q. I'll call your attention to Tracts 27 and 71, under which the Protestant, Elizabeth Payne owns part of 1/8 royalty and ask you to state what she received in royalty for April, 1947, and what she would receive under Unitization?

A. What were those tract numbers?

Q. 27 and 71.

A. 27 is Phillips-Garn A gas property. They received for their royalty interest in April, 1947 $132.00,—under the Unit Plan they would receive about $9.00 per month.

[fol. 1415] Q. And Tract 71?

A. Tract 71 is the Phillips-Garn-B, they received for royalty in April, 1947,—no, they received no royalty for April, 1947 and under the Unit Plan this Tract would receive about $16.00 per month.

Q. Now, I'll call your attention to Tracts 67, 68, 69 and 70, under which Dorothy McClaren, Max E. McClaren, George A. McClaren, Maurice McClaren and Ida B. Rivers are the owners of 1/8 royalty and ask you to state what

royalty they received for 1/8th royalty in April, 1947 and what they would receive under the Plan?

A. Tracts 67, 68, 69 and 70,—I will separate those tracts,—67 and 68 of the McClaren leases, A and B respectively, Anderson-Prichard-,—Tracts 69 and 70 Amerada-McClaren lease,—there are no producing wells on the property, therefore they received no royalty in April, 1947. Under the Plan they would receive about $91.00 per month, that is, for all four tracts, 67, 68, 69 and 70.

Q. I'll call your attention to Exhibit 24 and ask you to state the names of the nearest well in the Medrano sand, to those four tracts?

A. There is a direct 10-acre offset to tract No. 69, being west of 70.

Q. Well, how far is the nearest well from those four tracts?

A. The nearest well, which is the Anderson-Prichard-[fol. 1416] Prentice 4-A, is about 1200 feet from the West side of Tract 67. In other words, there is a 10-acre location between it and Tract 67.

Q. There is a 10-acre location between it and the tract No. 67?

A. Yes.

Q. And on which there is no well?

A. That's right.

Q. Now, as we go North from No. 4-A Prentice, how far is it from the McClaren tracts to the well North?

A. You refer to the Northwest corner of 67?

Q. Well, just take the nearest tier of 10-acre tracts,—how far away is the next well?

A. About three 10-acre locations West of Tract 67.

Q. Then, take the next tier to the North, how far is it?

A. The first row of wells to the West of Section 6-5N-9W, there would be four 10-acre locations between tract 67 and the nearest producing well, which is the Anderson-Prichard-Pickard No. 1.

Q. I'll ask you to state whether or not those four tracts have been defined by actual drilling operations, in your opinion, sufficiently to definitely establish their production, —their productivity, so that you could make a decision,

or so that you could make a division or determine correctly the amount of oil in place under those tracts?

A. The Anderson-Prichard-Prentice-B, which is the West [fol. 1417] 10-acre offset to tract 69, and 69 is a very small well. They set its allowables at 90 barrels for April and it didn't make any oil. In the Corporation Commission allowables it's due for June, the Anderson-Prichard-Prentice 4-X, in the same allowable schedule was allowed 200 barrels,—the Anderson-Prichard-Prentice 3-A is allowed 200 barrels. The lease produced 11,615 barrels of oil for the month of April, 1947. Now, you have two very good wells close in to this lease and one that isn't so good. If you could drill some good wells on these tracts, at least one good well, on the McClaren tract,—so, I don't believe it is thoroughly developed.

Q. I'll ask you to state whether or not in your opinion there's been sufficient actual drilling so that you could, with any degree of accuracy, determine the amount of oil in place under the four McClaren tracts?

A. With the information available, it would be very hard to determine exactly how much oil there was under those tracts.

Q. I'll ask you to state whether or not you would require that a well be drilled on one of those tracts before you could, with any degree of certainty, determine the amount of oil in place under the tracts?

A. I would require a well drilled on, say, tract No. 67, near the South side, I should say the South Central side of tract 67, before I would try to make a good estimate of the amount of oil under those four tracts.

[fol. 1418] Q. I'll call your attention to Tract No. 58 under which the Protestant, J. M. Ball is the owner of the part of the 1/8 royalty, and ask you to state what was paid the 1/8th royalty interest in April, and what would have been paid under the Unit Plan?

A. Tract No. 58 is the Anderson-Prichard-Pickard lease and it produced no month,—no oil for the month of April, 1947 therefore had no royalty for that month. Under the Unit Plan it would receive $427.00 per month. I'll call your attention——

Q. I'll call your attention to Tract 57, under which the

Protestant, Clyde Kahle and the Bob White Oil Company own an over-riding royalty interest and ask you to state the total production from that lease in money, for April, 1947, what would it have been,—what would have been received under the Unit Plan?

A. The value of the production received from tract No. 57, which is the Walker property was $1080.00 royalty for the month, not the royalty interest, but the full 8/8.

Q. What would have been received for the full 8/8?

A. For 8/8, $1080.00 and under the Unit Plan——

Q. Well, give me 1/8, the 1/8 interest, that will be for comparision purposes?

A. 1/8 interest received $1260.00 for April, 1947 and under the Unit Plan he would have received $463.00, a decrease of $797.00.

[fol. 1419] Q. Now, I'll call your attention to Tracts No. 56 in which Protestant, T. B. Walker owns an interest in the 1/8 royalty, incidentally the protestant, T. B. Walker holds an interest in the 1/8 royalty in Tract No. 57 also and I will ask you to state the amount of royalty paid for April, 1947 and the amount that would have been paid under the Plan?

A. On Tract 56, is the Anderson-Prichard-Walker-A lease. In April, 1947, they received $1152.00. Under the Unit Plan they would receive $610.00, a decrease of $555.00.

Q. I'll call your attention to those two tracts, 56 and 57, —the Anderson-Prichard-Walker and the Stephens-Walker and I'll ask you how those tracts are located on the structure, with reference to the favorable probable productivity of oil?

A. These two leases are located right down at the bottom of the structure,—you might right say right down at the bottom of the pile so that all of the oil from up structure would drain to these leases, and if the permeability and porosity is as set forth here, that would be comparable to the A. C. Wilcox, and these leases would produce a very long time at their present rate.

Q. I'll ask you to state whether or not those two leases are fully developed?

A. Those two leases have one well to 40 acres and I feel that they should have one well to 20 acres, at least. The

productivity of the leases indicate that one well to 20 acres [fol. 1420] would take it out very nicely and make a nice profit.

Q. Do you base that opinion on your study of the porosity and the permeability of the sand and the viscosity of the oil to be recovered?

A. Yes, I do.

Q. You think 20-acre spacing would be optimum for the production of oil on this lease?

A. 20-acre spacing would certainly recover much more oil on these two leases than 40-acre spacing, under present method of production.

Q. In your opinion, is the proportion of the total recoverable oil allowed these two wells inequitable?

A. I feel they should have much more oil allowed them, because, under the law of capture they will continue to get this oil for many years yet.

Q. I'll call your attention to Tract 55, under which the Protestant, Clyde Kahle owned 1/8 royalty interest, and ask you how much the royalty was in April, 1947 and how much it would have been under the Plan?

A. We have had that one.

Q. All right,—I'll call your attention to Tract 66, in which Carrie C. Dixon owns a royalty interest and ask you how much the royalty was in April, 1947, and how much it would have been under the Plan?

A. I don't have Tract 66 calculated.

[fol. 1421] Q. All right, I'll call your attention to Tract 67, under which the McClaren heirs and the Protestant, Ida Rivers have an interest in the 1/8 royalty,—well, we have already gone over that tract?

A. Yes, we have.

Q. I'll call your attention to Tract No. 18, under which the Protestant, John A. Fletcher owns an interest in the 1/8 royalty, and ask you what that tract received in royalty in April, 1947 and what it would be, what it would have received under the Plan?

A. Tract No. 18, that is the Phillips-Fletcher lease. That lease has two oil wells and one gas well. In April, 1947, the royalty owners, from their oil interest, received $2297.00. Under the Unit Plan they would receive $2096.00, a de-

crease of $201.00. There was no gas produced or sold on that lease in April, 1947.

Q. I'll call your attention to Tract No. 45, under which the Protestants, Eva Parker owns an interest in the 1/8 royalty and ask you what the royalty was in April, 1947 and what it would have been under the Plan?

A. Tract No. 45 is the Magnolia-Niles,—we have covered that one.

Q. All right, I'll call your attention to Tract No. 6, under which the Protestant, Frank Pohlemann owns an interest in the 1/8 royalty and ask you to state the amount of royalty [fol. 1422] paid in April, 1947 and what it would have received under the Plan?

A. Tract No. 6, is the Stephens-Pohlemann lease. They received $744.00 for the 1/8 royalty interest. Under the Unit Plan they would have received $768.00, an increase of $24.00.

Q. Now, I'll call your attention to Exhibit 24 and ask you to examine that Exhibit with reference to the oil producing area of the Medrano sand zone as disclosed on the map and state whether or not in your opinion, the leases in the oil belt have been fully developed, that is, if the wells have been drilled so as to have the optimum spacing for the production of oil?

A. In certain areas in the oil zone of the Medrano sand, there could be several additional wells drilled, and pay the well out and make a very good profit on the well. As to why the Companies haven't drilled them, I don't know.

Q. Have you studied the porosity and permeability of the sand and the viscosity of the oil, so as to determine the optimum spacing of wells in the oil zone?

A. Well, in studying the spacing, you would take the thickness, the permeability, the proosity and try to find out how much oil that would possibly be produced, taking into consideration your sand thickness, and the possibility that a 10-acre lease would give you, earn a satisfactory percent on your money. If this pool,—in this pool it has been said [fol. 1423] that there is 97,000,000 barrels of oil in place and that from 25 to 70 percent could be produced. My estimate is it would be 35 percent. We have understood that in the Oklahoma City Wilcox zone——

Q. What is the spacing in the Oklahoma City Wilcox?

A. Well, they had one schedule in the City and one outside,—I believe it is less than 4 acres average.

Q. And under that spacing isn't it a fact that the recovery is 41 percent of the oil in place, estimated?

A. As to the exact figure, I believe it is 35 or 36.

Q. Now, what do you expect to recover in the Oklahoma City zone, with that spacing?

A. Well, the field is getting pretty close to its economic limit in certain places,—I don't believe it will exceed 40 percent, but, say you produce 30 percent of the 30,000,000 barrels——

[fol. 1424] (Reporter's Note: The witness is being examined by Reford Bond, Jr.)

A. (Continued) And if you had 100 wells in that zone, that would still give an excess of 90,000 barrels per well—at the present price it's $180,000 per well, so 100 wells in that oil producing section under present estimates would pay for themselves easily and allow a good profit.

Q. What in your opinion will be the best wells in the unit in the Medrano sand area?

A. To be conservative and allow the companies their return of their money, I would guess 20 acre spacing in the oil zone.

Q. In the event of 20 acre spacing, how many additional wells will be required to bring the leases in the oil zone to their full development?

A. I haven't counted the oil wells in this zone, assuming you have 1300 acres in the oil zone, that is, the figures set forth in Exhibit 71, you could drill approximately 65 wells in the oil zone and there are 32 drilled, that will allow 33 more.

Q. How much does it cost to drill a well in the Medrano producing horizon?

A. As set for the Exhibit——

Q. I mean to complete it.

A. And put in the tracts as set forth in Exhibit 1, it will average $55,000 when it is made up, due to the rise in price, since that time a fair estimate would be between $60,000 and $65,000.

Q. And what would be the additional investment required [fol. 1425] to develop the oil zone of the Medrano sand?

A. Approximately 2 million dollars.

Q. Now what would be the cost of the installation of the recycling plant in the Medrano sand zone including connection to all oil wells which produce gas in connection with gas injection wells and the drilling of 7 additional wells in the oil sand area.

A. As set forth in these two reports, Exhibit 1 and Exhibit 71, the companies planned on between $1,500,000 and $2,000,000.

Q. Now, I will ask you what per cent of the oil in place will be produced in the leases in the oil zone are fully developed on 20 acre spacing and, of course, properly operated, and considering the gas production to be, as now controlled by the order of the Corporation Commission.

A. All with the gas production held as they started it means another zone and on a 20 acre spacing and the figure of between 30 and 35 per cent recovery will be a very good estimate.

Q. How much in your opinion, will be recovered by a unit operation as proposed in the present plan if properly operated?

A. Well, taking into consideration several pools, for instance the Billings pool in northern Oklahoma, they started gas in that pool early in life before much pressure was depleted and continued until the gas got out of hand, you might say, as of today, the pool has produced around 19,000,000 barrels of oil. The estimation in these days is around 25,000,000; however others estimated 30 or 35 mil-[fol. 1426] lion barrels which gives better than a 50 per cent recovery, however, they had 10 acre spacing and they had a wide spacing at West Cement, 30 to 35 per cent is a good estimate.

Q. How long, in your opinion, will be required to produce the oil under the unit operation as proposed, assuming that it will be properly operated.

A. Oh, from present day operations, 15 to 18 years.

Q. And how long will be required to produce producable oil on 20 acre spacing plan considering that gas will be as now.

A. Well, there will be a little difference in producing life, you will have more outlets if you have 20 acre spacing,

therefore you could produce a little fast, however, in pressure maintenance of recycling you have a more pressure differential and the two will offset each other in my estimation.

Q. I understand then that it is your opinion that if the Medrano oil belt were fully developed and gas regulated, there will be no waste of oil and gas over and above and such subjected by the unitization plan, assuming that it will be properly operated.

A. Assuming proper operation in a unit and the same spacing in a unit, a unit will save more oil and save more gas, however, in this setup they suggest no drilling, a few more, 7 I believe, is the figure they suggest, that the two plans will recover about the same amount of oil and I can't [fol. 1427] see that they will have too much more waste in 20 acre spacing and proper operation.

Q. Have you examined the plan for the actual optimum recovery of the oil and gas as proposed by the applicants herein—as to the feasibility of the plan?

A. Well, in that application they merely stated that they will inject gas and water and they don't mention where they were going to inject gas or water, so from the plan it's hard to determine exactly what they are going to do with the unit after it's formed, it's hard to pass judgment on it.

Q. If the plan were made more definite and certain so the location of the wells were spotted and the line and where the gas will be reinjected of the structure were defined, would you have sufficient information to determine as to whether the plan is feasible?

A. Yes.

Q. Now, I call your attention again to Exhibit 24 and to the various leases of which only a small portion is included in the pool and which have no development on the leases to the Medrano sand, and ask you to state if it isn't a fact that *that* neither the oil or the gas from the marginal edge of the tract will be commercially produced by wells drained on the lease and be considerably produced, I mean, a man will get back his money and make a profit on the operation.

A. For an example, would you pick Tract 50?

[fol. 1428] Q. Yes, that is a very good example, that is the Amerada-Woods lease.

A. Now, in the light of the information, I would not want to put $65,000 there myself.

Q. As a consulting engineer, would you advise a client to put a well on the Amerada-Woods lease in the Medrano sand?

A. No, on the present information, I would not.

Q. I will ask you if you had a client and owned the Amerada-Woods lease and your primary tract was about to expand, would you not advise him to drill a well to discover deeper horizons of productive gas?

Mr. Williams: I don't know what that has to do with this hearing.

Reford Bond, Jr.: We believe that it is very important to the royalty owners if a small piece of a lease is included in the unitized area, the life of the lease is prolonged and perpetuated as long as oil and gas is in the unitized area; for instance, the Amerada lease has no production except one well which is producing from some horizon other than from the Medrano sand, when that well becomes exhausted that will stop them and expire and then that well returned to the owners of the minerals, that if one well is exhausted [fol. 1429] and a small portion of the lease which is less than 2½ acres of an 80 acre lease, it is included in the Medrano unitized pool, the lease is perpetuated and there is no way for the lessee to force or require the operating company to explore for additional sand unless they take it to court, unless it offsets, therefore these matters are very important to the lessors of the Amerada-Woods lease. It may be that some lessors would wish to become a part of that and this oil and gas that might lie under the tract where some other might for the same reason or other reasons desire to be left, and so long as his inclusion and exclusion does not effect the operation of the unit, then it appears to us that the desire of the royalty owners or lessors should be given consideration by the Commission. It certainly can't make any difference to the lessee, he could'a't recover the oil anyhow.

Chairman Bond: What sand does the plan cover?

Reford Bond, Jr.: Medrano sand.

Chairman Bond: Suppose you represented a client, that

could drill to a deeper sand, does it prevent him drilling for a deeper sand?

Reford Bond, Jr.: No, but if his lease isn't going to bring in anything, he would not have any incentive, he would not want to go ahead on it, it's very difficult to get some [fol. 1430] lessee to drill a deeper sand and that is the valuable right to the lessor if his lease has to be perpetuated.

Chairman Bond: What do you suggest for the purpose of people who have leases of that character.

Reford Bond, Jr.: I suggest that the lease be included in the pool in unitization and the production of the question which I was asking.

Chairman Bond: You are asking for the production whether it ought to be included in the pool, the witness may answer if they are bases that should not be included in the pool, then the Commission wants to know. You may answer Mr. Witness.

A. Witness: As long as the well is not a nuisance to the unit, it should not be included to keep a lease in effect.

Q. Now, is there sufficient information obtained by actual drilling to cause you to be able to determine whether or not the Amerada-Woods leases contains any oil sand in the Medrano horizon.

A. With the drilling as far away as it is, it will be difficult to determine with any certainty how much sand on that property, for instance, Palmer-Sturba No. 7 changed that sand zone for a well down here (indicating) will change it.

Q. Well, will it be a good, sound geological engineering opinion to say that the oil section does not underlie the Amerada lease, considering the information that we have at hand?

[fol. 1431] A. I would not go so far to say that it isn't underlying the lease, there is a possibility that it doesn't and it's possible that it does.

Q. And still you would not go so far as to say that it does?

A. No.

Q. Then, there has not been sufficient drainage to make a definite point on that?

A. That is right.

Q. Now, I call your attention to the Exhibit that is now on the board.

A. What number?

Q. Exhibit 54-R which discloses the bulk in the Medrano sand horizon, will you please give the Commission your opinion as to where the fault lies between Segment A and B and whether it is a fault and what you have of that opinion.

A. Well, there is plenty of geological information to show that there is a fault, there are several wells located along up here (indicating), however, up at the upper end in the northern limits of the pool, that information is at least 2000 feet away from the fault so that the fault could exist there with more throw or less throw than shown.

Q. Is that sufficient information for you to say definitely that the fault does not separate the Medrano oil and gas sand in Segment A, from that in Segment B?

[fol. 1432] A. As to the geological information, it is very far away from the west side of the fault, it's more than 1 mile away on the east side, it's more than 2000 feet to the north well that penetrated the Medrano which will indicate the information is very sketchy, however, on the bottom-hole pressure information, the man that drew the iso-baric map drew that to suit himself for the faults.

Q. He drew the contours on that to suit himself?

A. Yes.

Q. You mean by that, there is a great deal of latitude in contouring?

A. Yes. These two areas, A and B will produce about alike, about the same time and give too much pressure across there and you can't tell whether there is a fault there or selah.

Q. Now, as to the part of the field that you have very definite information.

A. It still is not too definite, however the information is in the Gulf Tract No. 4, that is right on the fault.

Q. Does that indicate that the formations are field from one to the other.

A. No, not necessarily.

Q. That does though indicate the presence of faults?

A. Yes, it would.

[fol. 1433] Q. Now, is there anything that indicates that the oil sand zone is connected at that point?

A. There is no information available to say that is correct.

Q. What is the difference in the bottom of the sand on the west side and the bottom of the sand on the east side as to sub-sea elevation?

A. It's made on the top, there is a base map here, if you like.

Q. I think that we should have both bottom and top.

A. All right, on the top taking the 4500 feet contour in Segment A and the 4400 feet contour in Segment B, it will show a throw or a displacement of about 90 feet on top of the sand.

Q. What is the thickness of the sand at that point?

A. The iso-baric map shows between 100 and 120 feet.

[fol. 1434] Q. Now, then, I'll call your attention to the Sherritt fault, which is between segment "B" and "C",—pardon me,—I mean the Sterba fault, and ask you if there is sufficient information as to that fault from which you could determine whether or not it effectively seals off the oil sand on the West side from the oil sand on the East side?

A. We have one well on the Phillips-Oaks lease, two on the Sterba lease and one on the Magnolia-Cement-Henley lease that are almost on the fault,—in fact two of these wells almost missed the sand, due to the fault.

Q. What are the facts, the information obtained from these wells?

A. Well, the fact is that it is faulted and the well drilled right in here missed the sand, which shows the sand is separated there by some means.

Q. You think the evidence shows that the sands are separated and are not connected in any way so as to permit the passage of oil or gas from one to the other at those points?

A. The water-oil contact in 36-6N-10W, the evidence is very definite as to the displacement of the sand.

Q. Then is there anything to indicate that it isn't separated all the way and that the fault extends to the North and East?

A. Well, it's hard to conceive of the fault running down here (indicating on plat) and breaking off and separating it just for the purpose of separating that one reservoir,— [fol. 1435] I would rather think it would come down here —(indicating on plat) rather than stop here (indicating on plat), unless the fault is scissored right at that one point for a pinch-out, I would think the fault would reach over here (indicating on plat).

Q. Now, the next fault, which separates segment "C" from segment "D",—I'll ask you to state if there is sufficient information in that area to determine whether or not that is a fault?

A. You are speaking of the Hartshorne fault. Down structure we have two wells fairly close to it, however, the displacement on that fault, to be exact, is less than ninety feet, so there is not information enough there to determine whether it is sealed off, or not.

Q. Now, I'll call your attention to the next fault, which separates segment "D" from segment "E", and ask you if there is sufficient information to determine whether or not that is a fault?

A. It is a fault, according to the information shown there is a large displacement or a large throw, which is about 550 feet on the low side where the 4800 foot contour is drawn in segment "E" from the pinch-out down to the first well on which there is something like 3500 feet as to the up-structure part of that fault, it would be hard to determine its displacement, however this section "D" was drilled earlier than section "E" and produced earlier [fol. 1436] than section "E" and from the production information it indicates that there is a seal-off there.

Q. So, from the facts we have it is apparent, I take it, that the faults between segments "D" and "E" seals the gas and oil on one side away from the gas and oil on the other?

A. Well, the production information would indicate that. There isn't geological information enough to determine.

Q. The geological information shows, though, that the two segments are not connected?

A. Yes sir, that's right.

Q. And is there anything to indicate that such fault

doesn't continue on to the North and East and through the gas sand area?

A. No, there is not.

Q. And the pressure Isobaric map indicates that they do continue on?

A. The production information indicates that.

Q. That is indicated by the production information,—not this map, I take it, indicates that the Medrano sand is divided into at least three common sources of supply.

Mr. Williams: Is Counsel testifying,—and we object to this as repetition.

Q. Well, I will ask you to testify how many common sources of supply there are in the West Cement Medrano area?

A. Well, I would state that in my opinion, there are two [fol. 1437] and possibly three. As I stated before, the information of up-structure is very sketchy because the Companies didn't want to drill the gas sand and I can't say,—I can't see why these faults don't extend on across up here (indicating on plat.)

Q. Now, if you were injecting gas from the various segments back into the gas sand area, could you just inject it willy-nilly and expect it to travel through all the gas sand area, repressuring all the gas sand area in the whole Medrano so-called pool, or would it be necessary to inject it in any specific manner in order to keep the gas from one segment from going into another segment, thus making an inequitable distribution?

A. Well, I wish you would clarify the word "inequitable."

Q. Well, I'll give you another question,—just strike that question,—in re-cycling in this area would it or not be necessary to use more than one plant?

A. Not more than one plant, but more than one well.

Q. It isn't necessary to use more than one plant?

A. No.

Q. Now, could you receive into the plant the gas produced from one common source of supply and the gas produced from another common source of supply and then return that gas to the same common source of supply or a like amount of gas to the same common source of supply, with one plant?

[fol. 1438] A. Well, of course, the gas is all alike and it wouldn't hurt to mix it up.

Q. And you could run to one segment as much gas as you took out of it, with one plant?

A. Yes, you could meter it,—of course, the plant is going to use some of it,—you wouldn't get it all back.

Q. The Plan does not indicate at what point the gas is to be re-injected into the structure, does it?

A. The only provision I saw about that, was that it would be re-injected in the up-structure and not down-structure where it would carry the oil up into the cap.

Q. Now, that alone would not be sufficient for you to determine whether or not the Plan is feasible as to the re-injection of gas, is that correct?

A. As to the feasibility of their Plan, the only part of the Plan, as I said before, was to put in a gas-cap. Whether they are going to distribute to each section, I don't know.

Q. Well, do you think it would be feasible if they took gas out of one common source of supply, for pressure purposes and put it into another, in a case of this kind?

A. Well, unless there was some corrosive qualities in part of the gas and unless the gas differed in different parts of the zone, I can't see how it would make too much difference where you got the gas or whether you put it, whether you brought it in from outside properties.

[fol. 1439] Q. Suppose you got the gas in the West common source of supply and you took all the gas out of the East and the West common sources of supply and put it all back into the West, do you think that would be feasible?

A. No, it would not.

Q. Well, I can't tell from the Plan whether they will do that, can you?

A. No, it doesn't say.

Q. And if we proceed on that theory then the Plan wouldn't be feasible, would it?

A. Not, to rob one area and feed the other, no.

Q. And you could do that under this Plan, couldn't you?

A. The way it's sets now, you could, yes.

Q. Mr. Murphree, you can sit down now, if you want to,—you have made a careful study of the instrument which has

been offered by the Petitioners as to the sand thickness volume in the West Cement Medrano sand,—haven't you?

A. I have.

Q. I'll ask you to state whether or not you have sufficient actual controlling, information from the Petitioners to determine accurately the amount of oil in place under each separately owned tract which is included in the Unit?

A. A method of calculating the number of acre-feet on each lease, additional information would more than likely change the amount as shown in this report, because a well, [fol. 1440] the Palmer-Sterba No. 7 which has been drilled would change the figures somewhat and if you drill it on 20-acre spacing it would change them some more.

Q. Would those changes,—changed figures be more correct?

A. Well, the more information you have, the more correct the set-up should be.

Q. Now, I'll ask you if it isn't a fact that the information which the Petitioners have given you, upon which sand thickness is based, is the same,—strike that and I'll ask you this. I'll ask you if it isn't a fact that a Petroleum Engineer could not from the available information figure out the amount of oil in place under some of these leases included in this Plan from the information that has been made available to you by these Petitioners, without its being just a rank guess,—I'll ask you whether or not that's true?

A. Well,——

Q. Well, in these Isopach Maps, or "Isopachous" Maps, we have been calling them here, there are a lot of estimates and whether those estimates should be called guesses or not, we in the oil industry sometimes call them guesstimates and in the case of a lot of these tracts, these estimates have been made, of course.

Q. And in a lot of those tracts, they are rank guesses, aren't they?

A. Well, I would have to say——

[fol. 1441] Q. Well, take the Amerada tract, No. 50,—and there are other tracts here, where the estimates are just as rank a guess as that one is, aren't there?

A. Yes, you could site a few, three, four or five.

Q. Now, Mr. Murphree, going back for a moment to your

20-acre spacing,—in the event this Plan was fully developed on 20-acre spacing, I'll ask you to state whether or not the information as to the fault, as to the sand thickness, and as to the oil in place in the reservoir, wouldn't be much more accurate than it is now, under the present information that the Petitioners have submitted?

A. As to the sand volume, let me exclude the oil in place.

Q. All right.

A. Oil in place,—the reason I exclude that is that they have had two good checks on the oil in place and I am inclined to believe that figure is a pretty good figure. As to the sand volume, there could be, oh, 15 percent difference with closer drilling, and maybe as high as 20 percent.

Q. And in the event the field was developed on a 20-acre spacing, I'll ask you whether or not if the Unitization Plan was instituted if they wouldn't produce more oil than they would under the present proposed Unit Plan?

A. No,——

Q. I'll ask you to state whether or not there would be a greater ultimate recovery of oil with 20-acre spacing?

[fol. 3442] A. You mean over the Unit Plan?

Q. I mean if you had 20-acre spacing and then Unitized it?

A. Oh, there is no doubt but that you would recover more oil that way, yes.

Q. What percent of the total oil in place would you expect to recover with 20-acre spacing under the Unit Operations?

A. Well, it would be in excess of 45 percent.

Q. And under the present plan of Unit Operations, which provides for only 32 wells, it would be what percent?

A. Well, it would be in the neighborhood of 40 percent.

Q. In the neighborhood of 40 percent?

A. Yes.

Q. So that would be how much difference?

A. Well, in the closely,—closer spacing I would say five, seven and half, to ten percent more, that is under the Unit Operations, both Plans.

Q. Yes, yes, and what about the time limit under Unit Operations, with 20-acre spacing,—how much time would be required in your opinion, to produce the oil?

A. With 20-acre spacing and pursuing the project dili-

gently and producing some gas, there should be produced that oil in twelve or fourteen years.

Q. And under the present Plan it would be how many years?

A. Under the present Plan I would estimate it fifteen years to eighteen years.

[fols. 1443-1444] (Reporter's Note: At this point the Commission recessed to further hearing of this case until 10:00 o'clock A.M. on July 22, 1947.)

[fol. 1445] BEFORE THE CORPORATION

COMMISSION OF THE STATE OF OKLAHOMA

(Title omitted)

NOTICE OF HEARING—Filed July 18, 1947

The State of Oklahoma to all persons, firms, corporations, partnerships, trusts, trustees, guardians, executors, administrators, fiduciaries of every kind, the State of Oklahoma and all agencies and subdivisions thereof and all other beings or entities owning oil and gas rights or otherwise interested in the common source of supply of oil and gas known as the West Cement Medrano Pool underlying the hereinafter described lands located in Caddo County, Oklahoma, or in the production, handling or marketing of the oil and gas that may be located therein or produced therefrom, or having the right to share and participate, either directly or indirectly, in the benefits of such production:

Notice is hereby given that, Amerada Petroleum Corporation, et al, Lessees of record of more than 51% of the area of the aforesaid common source of supply of oil and gas, did on the 18th day of July, 1947, file with the Corpora-[fols. 1446-1447] tion Commission of the State of Oklahoma an amendment to the original petition filed in said cause by amending the proposed plan of unitization attached thereto in the particulars set forth in said amendment.

That said amendment has been set for hearing before the Corporation Commission at its court room in the State

Capitol Office Building at Oklahoma City, Oklahoma, at 10:00 o'clock A.M. on the 29th day of July, 1947.

That all those to whom this notice is addressed, and any and all other persons who claim that they will be affected by the amendment, or the petition as amended, shall have the right to be present and participate at said hearing, and shall be granted the opportunity at said time and place to offer evidence and be heard in support of, or in opposition to, the amendment or petition as amended, and in regard to any other matter or thing pertaining to said amendment or petition as amended.

Dated this 18th day of July, 1947.

Corporation Commission of the State of Oklahoma. By Reford Bond (s), Chairman; ——— ———, Commissioner; Ray C. Jones (s), Commissioner. (Seal)

Tom McMurray, Secretary.

[File endorsement omitted.]

[fol. 1448] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

(Title omitted)

AMENDMENT TO PETITION—Filed July 18, 1947

Come now the undersigned petitioners and hereby amend their petition filed in this cause by amending the plan of unitization attached thereto in the following particulars, to-wit:

1. The last sentence of Paragraph XXVII entitled "Subscribers" reads as follows:

> "The signing hereof by each of the subscribers hereto is conditioned upon the approval of this plan of unitization by the Corporation Commission on or before the 1st day of February, 1947."

The above quoted paragraph is hereby amended by striking out the clause "on or before the 1st day of February, 1947" so that said clause as amended reads as follows: "The signing hereof by each of the subscribers hereto is conditioned upon the approval of this plan of unitization by the Corporation Commission."

[fol. 1449] 2. In lieu of "Exhibit B, Part 1," attached to the plan of unitization on file with the Corporation Commission as a part of the petition filed herein which said exhibit sets forth the percentages of interest in the unit, there is hereby substituted the "Exhibit B, Part 1," which is attached to this amendment and made a part hereof, and which sets forth a revised computation of percentages of interest in the unit.

3. There is hereby inserted in Exhibit D, attached to the proposed plan of unitization on file herein, the following which shall be a part of said exhibit to the same extent as if written therein, which shall be a part of said exhibit, to-wit:

Operator, Lease and Well	*Tract No.*	*Assigned Value of Well*
Palmer Oil Corporation		
Sterba #7	31	55,126

Except as hereinabove specifically set forth, the plan of unitization on file with the Corporation Commission in this cause as part of the petition filed herein shall remain unchanged, and petitioners adopt and re-allege all of the allegations of the original petition filed in this cause as herein amended.

Wherefore, Petitioners respectfully pray that the plan of unitization heretofore filed in this cause as hereby amended be approved.

Dated this 18th day of July, 1947.

[fol. 1450] Amerada Petroleum Corporation,
By Booth Kellough (s), ——— ———,
Its Attorneys.
Anderson-Prichard Oil Corporation,
By Brown, Darrough & Ball,
W. H. Brown, Its Attorneys.
Gulf Oil Corporation,
By ——— ———, ——— ———,
Its Attorneys.
Magnolia Petroleum Company,
By W. R. Wallace (s), ——— ———,
Its Attorneys.
Phillips Petroleum Company,
By R. M. Williams (s), ——— ———,
Its Attorneys.
Ray Stephens, Inc.,
By Ray Stephens (s), ——— ———,
Its Attorneys.
Stephens Petroleum Company,
By Ray Stephens (s), ——— ———,
Its Attorneys.

[fol. 1450a]

EXHIBIT "B" TO AMENDMENT TO PETITION

PART I

Tract Number	Lease Name	Legal Description	Sec.	Twp.	Range	Operator	Percentage of Interest in Unit
1	Odla-Table	S/2 SE NE	29	6N	10W	Ray Stephens, Inc.	0.18442%
2	Dome-Bo	NE SE & NE SE SE	29	6N	10W	Stephens Petroleum Co.	0.78785
3	Brown	S/2 SW NW & SW SE NW	28	6N	10W	Stephens Petroleum Co.	0.08253
4	Pell	W/2 SW	28	6N	10W	Stephens Petroleum Co.	3.51358
5	Pell	E/2 SW	28	6N	10W	Gulf Oil Corp.	2.65959
6	Pohleman	NE NW & NE SE NW & NE NW NW	33	6N	10W	Stephens Petroleum Co.	1.96799
7	Wilhite	N/2 SE less SW NE SE	28	6N	10W	Ray Stephens, Inc.	0.07288
8	Wilhite	SW NE SE	28	6N	10W	Ray Stephens, Inc.	0.01154
9	Samwill	W/2 SW SE & SE SW SE & SW SE SE	28	6N	10W	Stephens Petroleum Co.	1.18366
10	Wilhite	NE SW SE	28	6N	10W	Ray Stephens, Inc.	0.04615
11	Wilhite	NW SE SE	28	6N	10W	Ray Stephens, Inc.	0.01540
12	Wilhite	NE SE SE	28	6N	10W	Ray Stephens, Inc.	0.01749
13	Wilhite	SE SE SE	28	6N	10W	Ray Stephens, Inc.	0.02700
14	Sherritt	NE/4 less SW SW NE	33	6N	10W	Gulf Oil Corp.	13.11109
15	Beemer	NE SE less SW NE SE	33	6N	10W	Amerada Petroleum Co.	1.12313
16	Farwell	NW SW & NE SW SW & S/2 NE SW & NE SE SW	27	6N	10W	Ray Stephens, Inc.	0.07715
17	Farwell-Becker	S/2 SW SW & W/2 SE SW	27	6N	10W	Stephens Petroleum Co.	0.11581
18	Fletcher	NW/4	34	6N	10W	Phillips Petroleum Co.	5.37390
19	Plummer—W/2	NW SW & NE SW SW	34	6N	10W	Stephens Petroleum Co.	4.09025
20	Plummer—E/2	E/2 SW less SW SE SW	34	6N	10W	Stephens Petroleum Co.	6.86555
21	Griffin	S/2 NW SE	27	6N	10W	Ray Stephens, Inc.	0.00828
22	Griffin	S/2 NE SE	27	6N	10W	Ray Stephens, Inc.	0.00163
23	Loose	S/2 SE	27	6N	10W	Sunray Oil Corp.	0.31227
24	Ulrey	N/2 NE	34	6N	10W	Sunray Oil Corp.	0.43240
25	Garrison	S/2 NE	34	6N	10W	Sunray Oil Corp.	0.31484

[fol. 1450b]

26	Oaks	SE/4	34	6N	10W	Phillips Petroleum Co.	11.21393
27	Garn "A"	SE SE SW	26	6N	10W	Phillips Petroleum Co.	0.02277
28	Farwell	N/2 NW	35	6N	10W	Phillips Petroleum Co.	0.18958
29	Dixon	S/2 NW	35	6N	10W	Sunray Oil Corp.	0.52429
30	Sterba (Below 6000')	SW/4	35	6N	10W	Gulf Oil Corp.	2.15688
31	Sterba (Above 6000')	SW/4	35	6N	10W	Palmer Oil Corp.	5.51614
32	Margaret	N/2 NW less SW NW NW	2	5N	10W	Phillips Petroleum Co.	3.87549
33	Holland	NE SE NW	2	5N	10W	Gulf Oil Corp.	0.06049
34	Melton	NW SW SE & SE SW SE & NW SE SE & SE SE SE	26	6N	10W	Ray Stephens, Inc.	0.02614
35	Melton No. 2	NE SW SE	26	6N	10W	Ray Stephens, Inc.	0.00198
36	Melton No. 1	SW SW SE	26	6N	10W	Ray Stephens, Inc.	0.01211
37	Melton No. 4	SW SE SE	26	6N	10W	Ray Stephens, Inc.	0.01693
38	Sames	NE/4	35	6N	10W	Magnolia Petroleum Co.	0.57283
39	Cement-Henley	N/2 SE & N/2 SW SE	35	6N	10W	Magnolia Petroleum Co.	1.59617
40	Hays	SE SE	35	6N	10W	Anderson-Prichard Oil Corp.	0.58977
41	Pierson	S/2 SW SE	35	6N	10W	Stephens Petroleum Co.	1.47267
42	Hartshorn	N/2 NE	2	5N	10W	Phillips Petroleum Co.	8.28583
43	Hartshorn	S/2 NE less SW SW NE	2	5N	10W	Amerada Petroleum Corp.	4.09085
44	Pickard Edwards	SW SW SW	25	6N	10W	Magnolia Petroleum Co.	0.00422
45	Miles	NW NW & S/2 NW & SW NE NW	36	6N	10W	Magnolia Petroleum Co.	0.36728
46	Medrano	SW/4	36	6N	10W	Magnolia Petroleum Co.	0.59865
47	I. Edwards	NW NW	1	5N	10W	Magnolia Petroleum Co.	3.36562
48	L. L. Edwards	E/2 NW	1	5N	10W	Magnolia Petroleum Co.	1.86102
49	Edwards	SW NW	1	5N	10W	Amerada Petroleum Co.	3.54720
50	Wood	NW NW SW	1	5N	10W	Amerada Petroleum Co.	0.18412
51	Caddo-Rowe	SW SW NE	36	6N	10W	Magnolia Petroleum Co.	0.00495
52	Lindsay	S/2 SE & NW SE & SW NE SE	36	6N	10W	Magnolia Petroleum Co.	0.31433
53	Davis	NW NE	1	5N	10W	Magnolia Petroleum Co.	9.34024
54	Davis	W/2 NE NE	1	5N	10W	Potter	0.06642
55	Davis	E/2 NE NE	1	5N	10W	F. L. Rookstool	0.03249

[fols. 1450c–1451]

EXHIBIT "B" TO AMENDMENT TO PETITION

PART I

Tract Number	Lease Name	Legal Description	Sec.	Twp.	Range	Operator	Percentage of Interest in Unit
56	Walker	SW NE	1	5N	10W	Anderson-Prichard Oil Corp.	1.55533
57	Walker	SE NE	1	5N	10W	Stephens Petroleum Co.	1.18658
58	Pickard	N/2 NE SE & SE NE SE & NE NW SE	1	5N	10W	Anderson-Prichard Oil Corp.	1.09412
59	Gregory	SW SW SW	31	6N	9W	Magnolia Petroleum Co.	0.00329
60	Gingrich	NW NW	6	5N	9W	Magnolia Petroleum Co.	0.02882
61	Gingrich	SW NE NW	6	5N	9W	Stanolind Oil & Gas Co.	0.00133
62	Davis	SW NW & S/2 SE NW & NW SE NW	6	5N	9W	Anderson-Prichard Oil Corp.	0.40951
63	Davis	NE SE NW	6	5N	9W	Lloyd Noble	0.00073
64	Prentice "A"	N/2 SW	6	5N	9W	Anderson-Prichard Oil Corp.	2.58742
65	Prentice "B"	N/2 SE SW & NE SW SW	6	5N	9W	Anderson-Prichard Oil Corp.	0.52078
66	Wray	SW SW NE	6	5N	9W	Anderson-Prichard Oil Corp.	0.00065
67	McClaren "A"	NW SE	6	5N	9W	Anderson-Prichard Oil Corp.	0.06316
68	McClaren "B"	SW NE SE	6	5N	9W	Anderson-Prichard Oil Corp.	0.91446
69	McClaren	N/2 SW SE	6	5N	9W	Amerada Petroleum Co.	0.13116
70	McClaren	NW SE SE	6	5N	9W	Amerada Petroleum Co.	0.02458
71	Garn "B"	S/2 NW SW & SW SW & W/2 SE SW & NE SE SW	26	6N	10W	Phillips Petroleum Co.	0.04096
72	Farwell #2	SE SE SW & NW SW SW	27	6N	10W	Ray Stephens, Inc.	0.13935
TOTAL							100.00000%

NOTE: All leases are subject to the adjustment outlined in Exhibit "B"—Part II.

[fol. 1452] BEFORE THE CORPORATION

COMMISSION OF THE STATE OF OKLAHOMA

(Title omitted)

AMENDMENT TO ANSWER OF CLYDE KAHLE, MAUDE KAHLE AND BOB WHITE OIL & GAS COMPANY—Filed July 22, 1947

For further defense, if need be, to the application of the applicants, these respondents, separately and as listed in their separate answer on file herein, leave having been first obtained from the Honorable Commission to file this amendment to said answer, allege and state as follows:

1. That the West Medrano Pool, which the applicants seek to unitize in this proceeding, is a part of and is within the West Cement field. That the said West Cement field was discovered more than 20 years prior to the approval of the unconstitutional statute under which said unitization is sought. That said unconstitutional statute excepts from its operation all fields discovered more than 20 years prior to its approval. That premises considered, this Honorable Commission has no power or authority to unitize the said Medrano Pool and no authority to entertain the application [fols. 1453-1454] on file herein.

2. That the alleged Medrano Pool is not a common source of supply as defined by the statutes of the State of Oklahoma but consists of numerous common sources of supply and that by reason thereof, the applicants alleged plan does not comply with the requirements of said unconstitutional statute and should therefore be rejected by the Honorable Commission.

Wherefore these contestants pray that the application herein be denied.

Reford Bond, Jr. (s), of Hatcher & Bond, Chickasha, Oklahoma, Attorneys for royalty owners as they appear in their answers on file herein.

[File endorsement omitted.]

[fol. 1455] BEFORE THE CORPORATION

COMMISSION OF THE STATE OF OKLAHOMA

(Title omitted)

AMENDMENT TO ANSWER OF TOM POTTER—Filed July 22, 1947

For further defense, if need be, to the application of the applicants, this respondent, leave having been first obtained from the Honorable Commission to file this amendment to said answer, alleges and states as follows:

1. That the West Medrano Pool, which the applicants seek to unitize in this proceeding, is a part of and is within the West Cement field. That the said West Cement field was discovered more than 20 years prior to the approval of the unconstitutional statute under which said unitization is sought. That said unconstitutional statute excepts from its operation all fields discovered more than 20 years prior to its approval. That premises considered, this Honorable Commission has no power or authority to unitize the said Medrano Pool and no authority to entertain the application on file herein.

[fols. 1456-1457] 2. That the alleged Medrano Pool is not a common source of supply as defined by the statutes of the State of Oklahoma but consists of numerous common sources of supply and that by reason thereof, the applicants alleged plan does not comply with the requirements of said unconstitutional statute and should therefore be rejected by the Honorable Commission.

Wherefore this contestant prays that the application herein be denied.

(S.) Reford Bond, Jr., of Hatcher & Bond, Chickasha, Oklahoma, Attorneys for Royalty owners as they appear in th ir answer on file herein.

[File endorsement omitted.]

[fol. 1458] BEFORE THE CORPORATION

COMMISSION OF THE STATE OF OKLAHOMA

(Title omitted)

AMENDMENT TO ANSWER OF ROYALTY OWNERS—Filed July 22, 1947

For further defense, if need be, to the application of the applicants, these respondents, separately and as listed in their separate answer on file herein, leave having been first obtained from the Honorable Commission to file this amendment to said answer, allege and state as follows:

1. That the West Medrano Pool, which the applicants seek to unitize in this proceeding, is a part of and is within the West Cement field. That the said West Cement field was discovered more than 20 years prior to the approval of the unconstitutional statute under which said unitization is sought. That said unconstitutional statute excepts from its operation all fields discovered more than 20 years prior to its approval. That premises considered, this Honorable Commission has no power or authority to unitize the said Medrano Pool and no authority to entertain the application on file here.

2. That the alleged Medrano Pool is not a common source [fol. 1459] of supply as defined by the statutes of the State of Oklahoma, but consists of numerous common sources of supply and that by reason thereof, the applicants alleged plan does not comply with the requirements of said unconstitutional statute and should therefore be rejected by the Honorable Commission.

Wherefore, these contestants pray that the application herein be denied.

(S.) Reford Bond, Jr., of Hatcher & Bond, Chickasha, Oklahoma, attorneys for royalty owners as they appear in their answers on file herein.

[File endorsement omitted.]

[fol. 1460] TRANSCRIPT OF HEARING—July 22, 1947 at 10:00 o'clock a. m.

[fol. 1461] Chairman Bond: Gentlemen, are you ready to proceed in C. D. 1308?

Reporter's note: Whereupon, all parties announced ready for trial.

MOTION FOR LEAVE TO AMEND ANSWER OF TOM POTTER ET AL. AND ORDER GRANTING SAME

Reford Bond, Jr.: If the Commission please, the protestants, the royalty owners on one hand and Tom Potter, Clyde Kahle, Maude Kahle and Bob White Oil Company ask leave to file amendment to their answer, specifically pleading that the West Cement Field was discovered more than twenty years prior to the approval of the constitutional statute under which it was provided, which reads as follows: "This Act shall apply to common sources of supply of oil, oil and gas, or gas distillate in this State.

The provisions of this Act shall not apply to any common source of supply of oil, oil and gas, or gas distillate or any part or parts thereof which at the effective date of this Act are being operated by or under pressure maintenance, repressuring, or secondary recovery methods or operation, Provided, that nothing contained in this Act shall prevent the voluntary inclusion and extension of areas in which are located such existing pressure maintenance, repressuring or secondary recovery methods or operations [fol. 1462] as unit areas under the provisions of this Act. Provided, this Act shall not apply to any field where the discovery well has been drilled twenty (20) years prior to the effective date of this Act." Also that we allege that the Medrano pool is not one common source of supply as described by the Statute of the State of Oklahoma.

Chairman Bond: Permission granted.

Reford Bond, Jr.: We offer copies of the amendment to the answer in evidence as Exhibits No. 107, 108 and 109.

Chairman Bond: Received.

[fol. 1463] Mr. MURPHREE, of lawful age, having previously testified, is recalled to the stand.

REFORD BOND, JR. EXAMINES THE WITNESS:

Q. Regarding your testimony last Friday as to the amount of oil produced on various properties in which the protestant royalty owners owned an interest, for the month of April, 1947, and as to the amount of oil which they expected to have received for their royalty interest under the unitized plan, I will ask you if you gave that testimony from the compiled set of figures, compiled by yourself.

A. In regard to the oil figures and the gas figvres, I got them from this group of figures I have on these two sheets here (indicating).

Q. Did you compile the figures yourself?

A. I did.

Q. And from what records did you make that compilation?

A. The oil figures from the allowable reports that the Commission puts out monthly and the gas figures from their files that they have available in this building.

Q. And you use arbitrarily, the sum of $2.00 per barrel as the value of the oil and 5¢ per cubic feet of gas?

A. That is right.

Q. Will you hand to the reporter the sheet and I ask her to mark it as an exhibit which is Exhibit No. 110.

[fol. 1464] A. Yes.

Q. That is the report that the Reporter has marked 110?

A. Yes, sir.

Q. We offer Exhibit 110 as part of the Witness's direct examination.

Chairman Bond: Received.

MARK ADAMS EXAMINES THE WITNESS ON FURTHER DIRECT EXAMINATION:—

Q. I wonder if you will mind putting back on the blackboard Exhibit 54-R? Now, referring to what line will be the Hartshorn fault on the exhibit, ——

A. It will be here, here is the Hartshorn fault (indicating).

Q. Referring to the discovery of gas wells on the east side and on the west side of that fault line, will you ex-

plain to the Commission what differentials in pressure there were, if any, I said discovery of gas, I meant discovery oil wells, what differentials in pressures if any indicated the presence of sealed from fault at that location?

A. As I recall the pressure on the Stephens-Pierson well, which is the discovery well for oil in that zone ——

Q. Which zone, Segment C?

A. In the Medrano sand?

Q. No, segment.

A. It is in Segment C, yes, the well had a little better [fol. 1465] than 1900 pounds bottom-hole pressure in the sand zone, at that time the pressure in the gas cap up in Segment B was a little above 1700 pounds and at that time there was no gas well in Segment C, there was a gas well drilled in November, 1943, the first gas well drilled in Segment C which was the Magnolia-Lindsey No. 1.

Q. Pardon me, I believe we have the segments mixed up, the Stephens-Pierson is in what segment, and Edwards in Segment B.

A. That is right, I am sorry, we did have a discovery gas well in Segment D.

Q. In order to correct the record, let's start over and get the record straight.

A. The Stephens-Pierson No. 1 was the discovery well in the Medrano sand, that well being in Segment C, at the time that well was drilled the bottom-hole pressure in the Medrano sand was above 1900 sand, that was in March, 1943, the gas wells over in segment B at that time had a pressure of about 1500 pounds, that was surface pressure, casing pressure I should say, as to the pressure on the gas wells in Segment D, I don't have that information.

Q. There was reference to the Sterba fault lying between Segment B and C.

A. Yes.

Q. Now, do you recall what the situation was as to Seg- [fol. 1466] ment C and D at the time of the discovery of the oil which would have relation to the Hartshorn fault?

A. As to the bottom hole pressure in Segment D, there was no gas well in that area at that time, the first gas well drilled in Segment D was November, 1944, that well had

a bottom hole pressure of about 1700 pounds when it was drilled in November, 1944.

Q. Now, the Stephens-Pierson was the first oil well drilled in Segment C?

A. First in Segment C and first in the Medrano sand.

Q. Then, I. Edwards was the first one in Segment D?

A. Yes.

Q. And what is the differential in pressure, if you recall, between these two wells?

A. The I. Edwards, the Magnolia-I. Edwards, which is Segment D completed in the Medrano sand and was completed in February, 1944.

Q. November, wasn't it.

A. Yes, November, 1943, had a bottom hole pressure of above 1900 pounds, at the same time the casing had pressure in the gas wells in Segment D were approximately 1500 pounds.

Q. That is all.

Cross-examination.

By Mr. Williams:

Q. Mr. Murphree, I believe you were employed in January or February of this year to make the study which you [fol. 1467] have testified in these proceedings, or what was the date approximately.

A. The date was sometime in November last year.

Q. November last year?

A. Yes.

Q. Now, in making that study, Mr. Murphree, what was the first thing that you did?

A. Well, after, of course, procuring the job of getting to do the work, I was told by the various companies that this information that they had compiled was available to the royalty owners, engineers and their representatives, so, after the survey of where to find the information and get it all together, I went to Phillips Petroleum Company's office, and I obtained most of the information which I have here, now does that answer that question?

Q. What did Phillips Petroleum Company tell you with

respect to the availability of any information that you might desire.

A. They gave me all the information that I asked for and said that any other information that I needed and wanted they would give to me.

Q. Did they tell you that they would assign one of their engineers to you in your study as to make any explanation that you might desire?

A. As to assigning an engineer to help me, they didn't do that, but they did have Mr. Woods help me.

[fol. 1468] Q. They did furnish you with all the information that you asked for?

A. Yes.

Q. And told you that anything else that you wanted would be supplied?

A. Yes.

Q. As I understand it, you went over the work of the engineering committee?

A. Yes.

Q. That study and report?

A. Yes.

Q. And you examined their basic information?

A. Yes.

Q. Now, Mr. Murphree, is your difference of opinion with that committee, if there is one, with respect to procedure that they followed or conclusions drawn from the procedure?

A. Well, one procedure that I would differ from is with respect to down-structure leases which will more than likely produce more oil as they are now going into the unit due to gravity drainage.

Q. Then, it's your opinion that the quantity drainage factor used by the committee is probably not sufficient to compensate for that drainage, is that your view?

A. I don't think it is.

[fol. 1469] Q. You did study the gravity drainage factor used by the committee?

A. Yes.

Q. And there was a formula to compensate for that?

A. Yes.

Q. And that was one procedure to which you did not agree?

A. Yes.

Q. Was that disagreement so much with the procedure, as they didn't allow the proper percentage factor?

A. It's not the procedure, I don't believe they allowed enough for the gravity drainage.

Q. You reviewed their manner of practicing top and bottoms of sand?

A. I did.

Q. And was that, in your opinion, in accord with general geological practices?

A. Yes, and engineering practices.

Q. Engineering and geological practices?

A. Yes.

Q. Now, I believe that you testified that you reviewed the various areas of the reservoir that have been included within the proposed unit area?

A. Yes, sir.

[fol. 1470] Q. Now, I believe your testimony was that those small tracts along the edge that have been included or probably or underlying with some oil and gas in the Medrano sand, but that in your further judgment it will probably not be in commercial quantities.

A. The west end, that is true in the west end of the field, I believe that it will be in noncommercial quantities.

Q. Now as to the east end, I believe you testified that a well drilled in that area will recover oil and will probably recover it in commercial quantities.

A. I don't see any reason why it wouldn't, lying on Tract No. 67.

Q. Now, are there any of the small tracts, Mr. Murphree, along either the north side of the field or along the south side of the field that have been included in the unit area which, in your opinion, are underlaid with no oil or gas in the Medrano?

[fol. 1471] A. I can't say that there was.

Q. And there would have been a question as to whether or not that oil or gas could be recovered under present methods of operations, commercially?

A. That's true.

Q. Now, will you refer to tract No. 63, which is the tract previously referred to, being the Noble-Davis' tract,—I believe you testified that in your opinion, there was in all probability some gas or oil in the Medrano sand underlying that tract?

A. I believe I testified yes, didn't I?

Q. Well, yes.

A. Yes.

Q. And you said that in your opinion it wouldn't be in such quantities as would justify the drilling of a well?

A. No, I wouldn't recommend drilling a well there.

Q. A well drilled there in the Medrano sand would in all probability have a drainage area extending out beyond that particular tract, would it not?

A. Yes, if it is drilled South,—if the well is drilled it would penetrate the Medrano sand——

Q. Well, just answer my question? If it were drilled into the Medrano sand it would have a drainage area extending out beyond the tract?

A. Yes.

[fol. 1472] Q. I believe you testified last week regarding the core data, that you were of the opinion that the percentage of permeability and the porosity in that immediate vicinity was low. To what core data did you have reference?

A. Well, the only core that I actually saw was the Potter-Davis core and then in the Commission's files I believe there was some data showing the sand, 10, 30 to 50% lime, a very tight sand and the probability would be less than five millidarcys permeability.

Q. The Potter-Davis well is less than a mile from the Noble-Davis tracts?

A. Yes.

Q. Now, I believe you testified that the fault displacement along the various faults had a tendency to lessen as you approach the trend of the structure?

A. I didn't say that directly, no,—I said as you reach the top of the structure, yes.

Q. And that degree of lessening is quite pronounced, is it not?

A. In some of the faults it is and in some it is not.

Q. And I believe you testified, if I understood your testimony correctly and if I didn't you may correct me, that the evidence both pro and con with reference to the connection in the uppermost portions of the structure is somewhat sketchy?

A. Yes, it is.

Q. And that the control points are quite some distance [fol. 1473] away from the supposed location of the fault?

A. In some cases they are.

Q. But you do have some control points adjacent to and in fact on the fault line?

A. That's true.

Q. And the evidence is such that Engineers and Geologists could have a very good argument as to whether the faults do or do not exist?

A. Well, as to argument,—they could argue back and forth a long time and the only thing that would settle it would be to go out there and drill some wells and get some evidence.

Q. And there is a question now as to what the facts actually are?

A. That's,—not as to what the facts that we have are, but as to the deductions.

Q. As to the deductions to be drawn from those facts?

A. Yes.

Q. Now, you refer to the pressure differential between a well drilled by the Stephens-Petroleum Company in segment "C", which I believe you said was the discovery well and the pressure in the gas-cap in segment "B"?

A. Yes.

Q. I believe you testified that differential was approximately 400 pounds?

A. When it was discovered, yes.

[fol. 1474] Q. Are you acquainted with the ratio of gas withdrawals from the gas-cap to that of the oil withdrawals in the oil zone up until the most recent order of the Commission?

A. Yes, I am.

Q. Now, Mr. Murphree, the withdrawals of gas in the ratio to the withdrawals of oil would that possibly bring

about a substantial differential between the two ratios, assuming that they were one common source of supply?

A. Well, then if the permeability and porosity are what they have set forth here, that differential should not exist. Considering the A. C. Wilcox, which has a permeability and porosity comparable, we might cite the case of the North end and the South end,—it ranged from 460 to 600 pounds and down here five miles south, Walnut Grove, we had about 400 pounds differential,—that's 5, 6 and 7 miles and ——

Q. As a matter of fact at the time the Pearson well was drilled no oil had been removed?

A. That's right.

Q. But a tremendous volume of gas had been recovered from the gas-cap?

A. Yes.

Q. And that fact would hold the differential in pressure?

A. The differential would be from the oil zone rather than just purely up-structure,—the gas well on the location in the Stephens-Pierson lease in segment "B" was [fol. 1475] more or less up-structure.

Q. Well, the difference is in that regard, whether it be up-structure?

A. Yes.

Q. Mr. Murphree, you wouldn't say that you could compare the Wilcox sand in the Oklahoma City field, with its high percentage of porosity and permeability with the Medrano sand of the West Cement field, would you?

A. Well, the oil sand in the Medrano sand is very good oil sand. It has very good permeability and porosity. Not as high as the Oklahoma City Wilcox but it does compare in a favorable way with the Oklahoma City Wilcox, however the gas-cap wouldn't be compared very closely.

Q. The Oklahoma City Wilcox does have in it freaks of very high permeability and porosity, does it not?

A. Well, some of those wells, there wasn't,—there wasn't any sand or anything there.

Q. A man could walk from well to well in Walnut Grove, that condition doesn't exist in the West Cement field?

A. Not to my knowledge.

Q. The sand in the West Cement pool is sufficiently tight

that there is no difficulty from sand——, isn't that true?

A. We had no difficulty.

Q. Whereas in the Oklahoma City field that sand was so porous and loose that it was a tremendous problem?

[fol. 1476] A. I should say it was.

Q. And that is evidence of high permeability?

A. Yes, that is one of the evidences.

Q. As a matter of fact, there are differentials in pressure within different segments of the West Cement Medrano field that are of equal magnitude to the differentials in the fault,— differentials in pressure across the fault lines?

A. May I have a look at that pressure map?

(Reporter's Note: A map is presented to the witness.)

A. (continued) Yes, it exists, according to this map.

Q. I'll ask you to state for the records the pressure of the Magnolia-Niles well, No. 10, as shown on Exhibit 72?

A. The pressure shown on this Exhibit 72, the data shows 892 pounds.

Q. That well is in segment "B"?

A. That's right.

Q. I'll ask you to note the pressure and state it for the records on the Phillips-Oaks well, No. 3?

A. This map shows a pressure of 429 pounds.

Q. What is the differential between the pressure in those two wells,— is it approximately the same figure?

A. 453.

Q. Those two wells are within the same segment?

A. Supposedly, yes.

Q. Now, I'll ask you to refer to the pressure of the [fol. 1477] Phillips-Fletcher No. 6 and state it for the records?

A. The pressure in the Phillips-Fletcher No. 6 is, as shown on Exhibit 72, 1119 pounds.

Q. This well is in the same segment that the Phillips-Oaks well No. 3 is?

A. As shown by this Exhibit, yes.

Q. What is the pressure differential between those two wells?

A. Approximately 700 pounds.

Q. Now, that pressure differential is as great as any pressure differential that exists across any of the faults in the pool?

A. It is comparable.

Q. Now, the distance between the Niles 10 and the Oaks 3 is something like a mile and three-quarters?

A. Yes.

Q. And the pressure difference that we were speaking of in the Stephens-Pierson and the Magnolia-Sames is less than three-quarters of a mile?

A. Yes.

Q. Do you know the date of the completion of the Magnolia-Sames well?

A. I don't have the date of completion of any of them,—I note here the time the Pierson was completed, which was in 1943.

Q. I believe you testified, Mr. Murphree, that in your opinion, with the drilling of one well to each 20-acres in the [fol. 1478] oil zone, that the injection of gas would recover as much oil from the pool as would be recovered under gas injection——

A. I said that if there was one well drilled on each 20 acres in the oil zone and if the gas allowables were held as the Commission has set them for this month and if there were no additional wells drilled for the Unit they would recover about the same amount of oil as the Unit could recover with gas injection.

Q. Now, if you were to drill that field with one well to 20 acres you would of necessity drill a number of walls that would be on a high gas-oil ratio, they would be high gas-oil ratio wells under the gas-oil contact?

A. Yes.

Q. And if they were not high gas-oil ratio wells at the time of their completion they would soon become high gas-oil ratio wells?

A. You mean all the wells?

Q. Yes, if they were not high gas-oil ratio when completed they would become soon?

A. They would be completed as good wells and later on the migration of oil down-structure would become such that

they would be high,—they would become high gas-oil ratio wells.

Q. Then there would be a number of wells, if drilled on each 20 acres, that would be high gas-oil ratio wells?

A. I would say yes to that.

[fol. 1479] Q. Mr. Murphree, would you recommend the drilling of any more high gas-oil ratio wells in this field?

A. No.

Q. And if you did drill them you would expect some high gas-oil ratio wells?

A. Yes, you would get some high gas-oil ratio wells.

Q. And if you were the well operator on this pool, you then wouldn't drill all thirty of the wells?

A. My assumption was not that it would be Unitized. My assumption in the drilling of these wells is that the law of capture would be in effect and these wells would produce from individual tracts, not as a Unit. Of course, it is assumed that the Commission would have some restriction on the gas-oil ratio as they do in other fields.

Q. The application of a gas-oil ratio has a very definite bearing on the economics of drilling and operating of oil wells, doesn't it?

A. That's true,—in Texas they have 2000 to 1 ratio, which they enforce.

Q. Would you, as an oil man, recommend the drilling of any more high gas-oil ratio wells in this pool, under competitive operation?

A. If I knew they were going to be high gas-oil ratio wells, I wouldn't.

Q. High ratio wells are bad fundamentally, aren't they?

[fol. 1480] A. That's true.

Q. You heard his testimony as to the location of these wells,—along the lower part of the structure, or at the bottom of the pile, as Mr. Adams would put it?

A. Well, he said they would be strung somewhere along the low side of the oil,—I didn't hear any testimony as to any exact location.

Q. In your testimony you brought out the fact that you don't know where the Unitization gas was to be injected, is that correct?

A. I said it would be injected, under the Plan, up-structure, but it didn't show where up-structure it was to be injected.

Q. Now, assuming that this pool is Unitized for gas injection and that it is contemplated that it,—that additional oil wells will be drilled along the lower part of the structure, you admit as an Engineer that you would be willing to leave it up to the Engineering judgment of the committee as to all phases of injecting the gas and locating these wells, would you not?

A. As an Engineer, the general engineering knowledge of the entire engineer's committee, the engineer's judgment should be the best way, I should think.

Q. And there should be a degree of discretion allowed in that respect?

A. Yes.

[fol. 1481] Q. Can you think of any reason why the operating companies operating the field as a Unit should not have—strike that question.

A. I might say of course that oil companies are in the business for the amount of money they can make out of their properties.

Q. That's what anybody is in business for.

A. That's what anybody is in business for and of course, they are going to try to obtain the best returns they can.

Q. I believe you testified the other day that your program of development,—let me change that,—not your program of development, but the drilling of wells, one to each 20 acres, would cost 2 million and some odd thousands dollars?

A. That's true.

Q. And that program is supposed to be engaged in by the Operators here, would cost somewhere in the same neighborhood?

A. I believe the estimate was $1,800,000.00.

Q. Then there is very little difference in the cost to the Operators in the two programs?

A. That's true.

[fol. 1482] (Reporter's Note: Mr. Murphree is still on the stand and being cross examined by Mr. Williams.)

Q. So, from that standpoint, the company will have particularly nothing to gain by the one unit program over the other?

Reford Bond, Jr.: I object to that.
Chairman Bond: Sustained.

Q. I will limit it from the standpoint of—which is an engineering question.

Reford Bond, Jr.: I object to that.
Chairman Bond: If the witness knows, he can give the figures.

A. I stated before that there is very little additional which I would recommend without life investment for the cost of the additional seven wells.

Mr. Williams: The point that I am making is that the charge has been made that the operators are recommending a program that is a substantial saving here, as a man that has on behalf of this people that is a qualified engineer and studied the situation, at their request, I am asking him to tell the Commission whether that charge is well founded and whether there is a substantial difference in the cost of the two programs.
Reford Bond, Jr.: Should the counsel be confined to argue at the proper time?
[fol. 1483] Chairman Bond: Yes, counsel will have no limits on his argument.

A. (Witness) I would like to clarify that question, in drilling additional oil wells and producing them your listing cost and operating cost due to their limited operations will be very much more than their unit operations, therefore, the original investment is indicative as to the cost of unit and non-unit operation. I might cite a case in the Billings pool, we were averaging around 10 or 11 cents for production costs prior to unitization, after unitization it was less than 3 cents per barrel.

Mr. Williams continues with the witness:

Q. The Billings pool is the pool in which you had the benefit of a water drive?

A. Yes, but we started gas injection.

Q. Now then, figuring the over-all operating cost, you enjoyed the benefit of a water drive?

A. That is true.

Q. And it wasn't necessary to buy water for that production?

A. But to recycle the gas.

Q. Now in a pool where it's necessary to purchase gas to make a gas injection for production, then your cost is then increased?

A. Yes.

Q. Assuming, Mr. Murphree, that you drilled the addi-
[fol. 1484] tional wells concerning which you have testified, so as to develop the oil zone on the base of one well to each 20 acres, and you then injected the gas into the gas cap to assist in maintaining the pressure of the reservoir, would you, in your opinion, obtain additional oil over and above that that you would gain by drilling in competitive methods?

A. I think so, yes.

Q. In other words, the additional gas to the reservoir and aspect of pressure maintenance will in your opinion result in greater recovery of oil.

A. On the same well spacing?

Q. Yes.

A. Yes.

Q. I believe that is all.

Reford Bond, Jr., Redirect examination:

Q. Mr. Murphree, what is the approximate cost of listing the oil in the Cement Medrano pool by use of pumping methods?

A. Well, the various operators down there are going to have various costs; for instance, some of the companies might charge one item to it, and other companies might not, the way they are listing down there now, it's going to run 15 to 20 cents a barrel, that is, sealed listing cost without the company's overhead attached to it.

[fol. 1485] Q. Now, about how long will it be under present methods of operation and assuming that one well will be drilled to the 20 acres, will it be, before it became neces-

sary to pump the oil wells in order to recover and list the oil.

A. I believe most of the wells are pumping now and any new wells will be put on the beam and some sort of a pump right away.

Q. Now then, suppose gas injection used and gas recycling used and pressure of the reservoir increased, that is, from the gas cap of the reservoir increased and reservoir energy increased so that the gas will cause the well to flow and cause the oil to come into the well bores, what would be the cost of listing the oil in that event?

A. Well, assuming that the well will following its production, the cost of producing on a competitive basis shouldn't exceed 10 cents, I might clarify that without the Continental Company's painting program that they now carry on.

Q. Calling your attention to Tract No. 46 on Exhibit 24, and which is the Magnolia-Medrano lease, and ask you to state how many gas wells appear to be completed on that lease to the Medrano gas zone.

A. Two.

Q. And have any wells been completed on that lease to the Medrano oil zone?

[fol. 1486] A. There is one, No. 11.

Q. Do you know whether or not that well is now producing gas with the oil?

A. Yes, that well is, I believe has been changed to a gas well recently, yes, it is classified as a gas well now.

Q. Then there are no wells at this time on that lease classified as oil wells?

A. That is true, there are no oil wells on that.

Q. Now, in the event that this pool is unitized, will the gas underlying the Magnolia-Medrano lease, in the event of recycling and gas repressuring is used and be a value in the producing and listing of the oil produced under that method of production.

A. The oil produced from the same Medrano lease?

Q. No, the oil produced from the adjacent oil wells.

A. Yes, that is the reason for putting it in there.

Q. Is there any compensation allowed the Medrano lease royalty owners and operators for the use of their gas for

producing the oil as contemplated by the recycling and repressuring.

A. The only compensation for their gas is the value of the gas at 5 cents per 1000 feet as included in the plaintiff's compensation, that doesn't say that it will be paid for over and over again, it just says a value for it once and that is the only value allowed for the gas.

[fol. 1487] Q. Is that the market value for the gas at this time in that area?

A. I believe the royalty owners are realizing more than 1000 feet out of it.

Q. Outside of that, no compensation is being allowed the owners of the gas under their lease for its use of the listing in the production of the oil.

A. That is the only value allowed for their gas.

Q. Now, I call attention to Tract No. 51 or Exhibit 24, which is a part of the Magnolia-Caddo-Rowe lease in Section 36 and ask you to state how many acres are contained in that lease as shown in the exhibit.

A. Ten acres.

Q. I will ask you, Mr. Murphree, to call your attention to the matter, if it serves that production from the Magnolia-Cement Caddo-Rowe lease, isn't a 40 acre lease as shown by this exhibit?

A. The whole lease is 40 acres, however you refer to tract 51——

Q. Tract 51 is ten acres and a part of a 40 acre lease shown by the exhibit?

A. Yes.

Q. How much area in acres of this lease is included in the unit, included in the pool, let us say as shown by this exhibit?

A. Of the 40 acres, Magnolia-Caddo-Rowe, the unit con-[fol. 1488] templates taking 10 acres of the lease in the geological limits of the pool according to this exhibit, which is Exhibit 24, it's about 2½ acres.

Q. Now, about what, according to the iso-baric map showing the gas sand thickness that has been offered by the applicants, is the thickness of the gas sand in this?

A. The iso-baric map which represents the gas zone as Exhibit 56-R, it shows a sand thickness of less than 75 feet, the nearest well to it which is about ½ mile away shows a

thickness of 62 feet and according to the northeastern limits of the pool, the sand thickness is zero increasing to 62 feet, one-half mile away, so I made an estimate of 10 feet average over that 2½ acres.

Q. And how many feet do you say the exhibit of the plaintiffs show sand thickness to be at that point.

A. This little tract in here (indicating) right above 36 is the one we are speaking of. It will show a thickness of 62 feet at the nearest contour line which shows a thickness of 75 feet, this limit here (indicating) assumes zero thickness so that it might just be an estimate on my part on the thickness that shows which I say is an average of 10 feet over the 2½ acres.

Q. Now, in your opinion, has there been sufficient actual drilling to make an estimate and determination as to whether there is any gas sand under there?

[fol. 1489] A. No, you can question it either way, whether there has or hasn't.

Q. In the event there is a gas sand underlying the small tract, I will ask you if there is sufficient gas in place there to justify a drilling of a well for recovery.

A. No, not for the amount of gas under that lease.

Q. Now, I will call your attention to Tract 61 under which protesting royalty owners Mary A. Farris has an interest in ⅛ royalty and ask you to state about how much area of that tract this applicant's exhibit 24 makes to be included in the Medrano pool.

A. They indicate about 2½ acres within the geological limits of the Medrano sand.

Q. Now, does the applicant's isopacious map of gas sand thickness indicate gas sand thickness under this little piece of land.

A. This line here represents 25 feet sand thickness of Medrano sand, this line is zero (indicating), it is a small tract we are speaking of, the nearest well to that tract in the Medrano is Anderson-Prichard Davis No. 1 which shows a thickness of 52 feet so an estimate there will not average over 5 feet, it's just an estimate.

Q. As shown by the applicant's map, now, Mr. Murphree, is that in your opinion, has there been sufficient actual [fol. 1490] drilling to determine whether or not that small

piece of land does lie within the confines of the Medrano pool.

A. No, there could be an argument either way on that.

Q. In event part of the Medrano gas sand does underlie this small piece of land, would there or is there sufficient gas in the sand to justify drilling a well on there to recover?

A. I would not recommend the drilling of a well on Tract 61 for the gas in the Medrano sand under that tract.

Q. Now, Mr. Murphree, will you refer to plaintiff's Exhibit 53, and state the value of the gas which the petitioners claim to be under this small piece of land.

A. On Exhibit 53, the Ramsey Petroleum Company, Grenrich shows the value of the gas to be $800.00.

Q. And the royalty owner's value there would be how much?

A. About $100.00.

Q. And you say under the unit plan they will be required 18 or 20 years to recover their gas to produce this.

A. To produce it, to produce this value, something like that, if I understand it.

Q. I don't mean the value, I mean the gas here if it's there as I understand the unit plan, Mr. Witness, and if it's your understand- for their production the gas has to be held in the reservoir until all the oil is produced, then the [fol. 1491] gas is produced. And I was asking about how long until this gas will actually be produced.

A. They don't contemplate producing the gas until the oil is produced.

Q. That is my thought, I just asked how long it would be before it's produced under the plan.

A. About 18 years before that will be produced. I might clarify that in saying that this gas might be chased around the reservoir before it is produced.

Q. Then it might not have any under this land at all?

A. That is correct.

Q. Speaking of the gas then, you are speaking of all the gas in the reservoir?

A. Yes.

Mr. Williams: You understand now, in the meantime the royalty owners will share in the oil wells.

Reford Bond, Jr., continues with the witness:

Q. I call your attention to Tract 66 on Exhibit 54 which is Anderson-Prichard Ray lease and C. C. Dixon, owners of 1/8 interest in the royalty and ask you how much area on that tract the applicants have attempted to include in the Medrano pool.

A. That is again, there they have attempted to take in the pool 10 acres, but there is about 3 acres in the geological limits of the pool.

[fol. 1492] Q. And that Ray lease is an 80 acre lease?

A. Yes, sir.

Q. I will ask you to state whether or not there has been sufficient actual drilling operations to determine accurately whether or not this small piece of land is within the confines of the Medrano pool.

A. The nearest well completed in the Medrano, which is Anderson-Prichard Prentice No. 4A is about 2000 or 2500 feet away and the sand volume estimates or estimates from this isopacious map made up from the wells near there so there could be very easily 3 acres, which could either be included or not included, you could take it or leave it or not increase the amount of acreage or decrease the amount of acreage there, and leave it entirely out.

Q. Now, the applicants show on that isopacious map how much sand thickness under the little piece of land.

A. It is this lease here (indicating).

Q. The south 1/2 of the northeast 1/4 of section 6.

A. It is the lease that we are speaking of, the nearest isopacious contour line shows 25 feet and of course the northern limits will show zero feet, an estimate to the average thickness there from this map will be less than 5 feet.

Q. And would that, in your opinion, be enough gas in there in that small area from the applicant's exhibit to justify expenditures recovered of gas in the lease.

[fol. 1493] A. Drilling a well?

Q. Yes.

A. I would not recommend drilling a well for that gas,——

[fol. 1494] Q. Would you give the Commission the esti-

mate, your estimate of the value of the gas claimed by the Applicant in this little tract?

A. They have it listed in their Exhibit 53, as $500.00.

Q. Which would be how much to the royalty owners?

A. About $60.00.

Q. Now, Mr. Murphree, I will call your attention to the tract, No. 59, which is a part of the Magnolia-Gregory lease, located in the West Half of the Southwest of 31, Section 31, and ask you to state about surface area is included in Applicant's Exhibit 24 of that lease, as being within the confines of the Medrano pool?

A. Within the geological limits, the estimate would be about two and a half to three acres.

Q. Now, do the Applicant's Exhibits show that that tract there has any gas-sand thickness under this tract, and if so, how much?

A. This is the Magnolia-Gregory lease, as shown on Exhibit 56-R, 25 feet,—the 25 feet contour line cuts across the tract, across the North limits of the pool, where it would be zero,—it would be an average of 20 or 25 feet from the Isopach Map, I think that would be a good estimate.

Q. Now, in your opinion, has there been sufficient actual drilling in this area to determine whether or not this small piece of land lies within the Medrano pool, or not?

[fol. 1495] A. No, the nearest well to that well, which lies in the Medrano section, is the,—the nearest well that lies in the Medrano sand is the Potter-Davis, which has a sand thickness of 57 feet and it is almost half a mile away or say, 2000 feet, so it would be very questionable whether it was in the pool or whether it has any sand, or not.

Q. Now, in the event the figure claimed for this small piece of land is correct, and that it is in the Pool, what would be the value of gas under this tract as shown by the Applicant's Exhibit 53?

A. It shows that $2100.00.

Q. And how much would that be royalty?

A. About $260.00.

Q. Now, then, I will call your attention to tract No. 44,—let's see, that's tract No. 44, which is marked of the Pickard, the Magnolia-Pickard-Edwards lease, in which L. L. Edwards, T. G. Gan, M. M. Davis and J. F. Ball own part of

the royalty, I'll ask you to state from Applicant's Exhibit 24 about how much area this lease, how much of the area of this lease the Applicant's claim is included within the confines of the Medrano pol?

A. I would estimate less than two acres, by the geological limits of the Medrano,—less than two acres, in my opinion, are within the geological limits of the Medrano sand pool.

Q. Has there been sufficient actual drilling of this area, in [fol. 1496] your opinion, to determine whether or not any part of this lease lies within the confines of the Medrano pool?

A. No, I don't think there has.

Q. Now, I'll call,—according to the Applicant's Sand Thickness Map, what do they claim as sand thickness for this little piece of land?

A. This is a tract where the thickness at the line is 50 feet,—this would be zero at the North limits,—I would say less than 5 feet.

Q. And what value do the Applicant's attribute to the gas under that tract?

A. $2700.00.

Q. How much would the 1/8 royalty be?

A. About $335.00.

Q. Now, I'll call your attention to the tract No. 33, which is the tract of the Gulf-Holland lease, which is located in the South Half of the Northwest of Section 2, and ask you to state approximately, from the Applicant's Exhibit 24, how much of the surface area of that lease is included in the confines of the Medrano pool, as claimed by the Applicants?

A. About 5 acres, or half of the lease,—half of the area which that lease covers is confined, contained within the geological limits of the Medrano pool.

Q. Now, I'll ask you to examine Exhibit 24 and state whether or not, in your opinion, there has been sufficient [fol. 1497] drilling actual drilling within the area of this tract to determine the extent of the Medrano oil sand at this point?

A. Well, of course, in that tract they had to make two estimates. In one estimate of the water level and the other as to the estimate of the top of the sand down there and the nearest well in segment "C" is the Phillips-Margaret No. 1,

which is something like 12 or 1400 feet away. A well drilled closer in to that lease would give you a much better opinion than is available now and in my opinion the information on that well is very sketchy from which to include that lease in this Unit, or to exclude it.

Q. What would be your opinion in the operation to determine whether or not that lease should be included or excluded, and if included to determine the porportionate share of gas?

A. Well, of course, Gulf doesn't own either of the off-set properties. There should be a well drilled closer in to that tract, either in the Phillips-Margaret, Phillips-Hartshorne, or the Amerada-Hartshorne.

Q. Would you recommend the drilling of a well on tract 33?

A. In the light of the present information, I would not.

Examination.

By Mr. Adams:

Q. Mr. Murphree, as I understand your testimony, while there may be some question about there being sufficient facts from which to determine with certainty the existance of [fol. 1498] certain faults extending across the Medrano section, there isn't any question in your mind but what there are at least two such faults which do seal off the Medrano sand of one side from the Medrano sand on the other side?

A. I said Friday, in the Edwards fault, in my estimation in the light of the production information, due to this being developed much later than this area up here (indicating on plat), that it was sealed off. In my opinion I believe it is sealed off.

Q. That is your opinion?

A. Yes, to clarify that, this limit here (indicating on plat) is not the top of the structure. Of course the geologist who drew this map might have intended this (indicating on plat) to continue out all the way. It wouldn't go to a certain point and break off abruptly.

Q. In other words it would extend through what is shown as the North limits of the Medrano sand area?

A. Well, more than likely, the geologist who drew this had some opinion as to that.

Q. Then, when you testified about the Medrano pool you were meaning, you really meant the Medrano area?

A. What I had reference to was the area which produced the oil and gas from the Medrano sand.

Q. Did you have an opinion as to whether that is divided into three separate pools?

A. I have stated, it was at least two, and maybe three.

[fol. 1499] Q. Separate pools?

A. Separate pools, yes.

Q. You are familiar with the method of operation for the production of oil in the Medrano area of the West Cement field, are you?

A. Yes.

Q. Some produce oil, some produce gas, some produce oil and gas and some produce water, is that true?

A. You mean they produce oil and water?

Q. Yes.

A. Yes.

Q. Some of the wells flow, some are required to be pumped, is that correct?

A. Yes.

Q. Does that cost more to operate a well that has to be pumped and which makes some water, than it does to produce a well that makes nothing but oil and flows?

A. Oh, definitely, yes, there is a very definite difference, substantial difference between a well that makes water and one that does not,—you must have treating tanks, settling tanks, and places to dispose of the water, unless you run it down the creek and kill all the fish. A well that produces water costs definitely more to produce than a well that doesn't produce water.

Q. Does the proposed Plan of Unitization take into con-

[fol. 1500] sideration all the different lifting costs of the oil on these different leases and give adequate consideration thereto?

A. The information that I have on the Plan is that it does not state the methods of lifting or take into consideration lifting costs whatsoever.

Q. Which would indicate what?

A. That they have not considered that in any of the equities set forth.

Q. In your opinion should that have been considered and set forth as a material factor?

A. In respect to the various companies it probably would mean something to the various companies, but with the royalty owners it wouldn't make much difference.

Q. Yes, I appreciate that.

A. As between the companies it would probably make some difference.

Q. Well, it wouldn't make some difference to the royalty owners that ultimately from an economic standpoint the portion of the lease may become so burdensome that it might be abandoned?

A. Yes, that is possible, however, when you get down to certain limits you are not going to produce much for anyone.

Q. Well, that would make some difference to the royalty owners, also?

A. Yes, it would.

[fol. 1501] Q. I believe you said that in order for you to state an opinion as to the—of the proposed Plan of Unitization you would have to know where it was proposed to drill the additional seven wells in the oil section and where it was proposed to re-cycle the gas, is that correct?

A. That's right.

Examination.

By Mr. Williams:

Q. Mr. Murphree, inquiry has been made of you in respect to location of the geological boundaries of this pool, as reflected in Exhibit 56-R,—that is the map on the blackboard. Now, assuming, Mr. Murphree, that there was no controversy here in respect to the Unitization of this pool, and you were employed by anybody, any client, based on the information at hand, to draw for him a map that would reflect the boundary, the proposed outer boundaries of the producing part of the formation in question, wherein would that map be different from that one on the board?

Counsel for Protestants: Objected to for the reason that he asked him to assume that he was not representing royalty owners.

Chairman Bond: He can ask him whether in his opinion

that map is correct and then if he says it is not, he can ask him what in his opinion would be a correct map.

[fol. 1502] Q. Let me ask you,—is the map on the board, Exhibit 56-R, a reasonably correct geological deduction from the evidence at hand?

A. This includes only the gas.

Q. Well, the boundaries of that map?

A. It is reasonably correct,—you could argue on very small points, but on a map of the boundary lines 300 feet or five hundred feet, on a map that scale would,—you could justify that much difference either way.

Q. You would not say that is not a logical interpretation of the facts at hand?

A. No, I wouldn't,—would you repeat that question?

Q. Yes, you wouldn't say that that is not a logical interpretation of the facts at hand,—in your opinion,—is your answer the same?

A. It is.

Q. Although the oil map is not on the board, would your answer be the same in respect to the oil thickness?

A. I can't recall any point that I would change too much.

Q. Mr. Murphree, in your study of the Plan, you have studied the equity portion of the Plan?

A. Yes, I have.

Q. The equities were not determined on the basis of surface acreage, were they?

A. No.

[fol. 1503] Q. Now, these small tracts that you mentioned, they were taken into account only as to the portion thereof shown to be within the limits of the pool?

A. Yes, the production limits of the pool, yes.

Q. And other equities were, their equities were calculated accordingly?

A. Yes.

Q. And they were calculated in the same manner, as were the equities as were the other tracts within the outer boundaries of the pool?

A. Yes, gas tracts were to be just like the other gas tracts.

Q. And the oil tracts were computed just as the other oil tracts?

A. Yes.

Q. As a matter of fact the producing oil wells in the Medrano sand at this time are on the pump, isn't that true?

A. I believe that all the oil wells reported on the Corporation Commission Schedule allowables as oil wells, are pumped.

Q. Now, under Unitization, assuming that no make-up gas is purchased and injected into this reservoir, do you know of anything that would cause these pumping wells to begin to flow?

A. Assuming that there is no additional gas injected, the only thing that would cause a pumping well to start flowing would be to get the gas-oil contact down low enough to cause [fol. 1504] the oil to flow.

Q. Then, the Unit Operation, if you expect to reduce the operating costs by making flowing wells out of pumping wells, you will, of necessity, be forced to buy a substantial quantity of outside or make-up gas?

A. Sure. And you might introduce water into the Medrano to raise the pressures,—if you don't use water it would be necessary to purchase gas.

Q. And that is quite an item of expense, is it not?

A. Yes.

Q. Now, if you do use water or gas the injecting of water is a sizeable part of the operating cost, is it not?

A. Yes, it is.

Q. Now, you mentioned the fact that the gas-cap gas under Unitization wouldn't be produced for some eighteen or twenty years, except to the extent that it might be—from your study of the Plan, you do not understand that the owners of gas leases will not participate in the production of oil in the meantime, do you?

A. According to the Plan set forth in Exhibit 1, they will participate in the oil production immediately,—yes.

Q. And that will not be dependent solely,—they will not be dependent solely on the small quantity of gas that underlies their leases and which may be produced in later years,—they will not be required to wait until that gas is produced? [fol. 1505] A. No.

Examination.

By Reford Bond Jr.:

Q. But they are required to wait eighteen years in order to get the last penny, aren't they? The time is set at eighteen years, isn't it?

A. Yes.

Q. Now, in the beginning gas is purchased to inject into this reservoir under the Plan of Applicants, to produce the oil there. It will still be necessary to use this gas and it will be used?

A. They contemplate using that gas over and over, yes.

Q. And the gas that is there now can be used along with the gas that is purchased?

A. Yes.

Q. And one wouldn't be used without the other?

A. That's right.

Examination.

By Mr. Williams:

Q. I believe you said you wouldn't recommend the drilling of wells on these small tracts? Such tracts as ~~41, 61~~, 56, ~~44~~, I believe?

A. Well, I took tract 44, 33, 61, 59, 66,—I wouldn't recommend drilling on those.

Q. Then, in the absence of Unitization, along,—how long [fol. 1506] would it take the land owners to recover the recoverable oil and gas under those tracts?

Mr. Adams: Objected to for the reason that there is no testimony from anybody that there is any oil under these tracts,—as to tract 33——

Chairman Bond: Sustained as to the other tracts.

Q. In respect of tract 41, 61, 66, 59 and 44, which, I understand, are gas tracts, how long would it take those owners to get their gas in the Medrano sand in the absence of Unitization?

A. They are receiving nothing now, and they would never receive anything from the Medrano sand.

Q. Is that also true as to the oil underlying tract 33?

A. Yes.

Q. Then, do you know, in the absence of Unitization any way whereby these land owners will ever receive any credit for the gas in relation to the gas tracts, or the oil under the oil tracts?

A. Well, they will never receive anything for the oil in the Medrano sand, however, a small amount might be picked up by re-leasing the tracts for other production.

Examination.

By Reford Bond Jr.:

Q. Mr. Murphree, I understood you, in answering Counsel cross examination awhile ago, to state that the map which is [fol. 1507] on the blackboard——

A. Exhibit 56-R?

Q. Exhibit 56-R, is a logical interpretation of the facts as you have them, and I'll ask you if you had in mind at the time you made that statement, the dry hole that is out there in the Northwest part, up there in the Northwest part of that map? You may explain that, if you care to do so.

A. You are speaking of the one on the Stephens-Dome-Bo? And the one on the Stephens-Brown lease?

Q. Yes.

A. The statement I made was that this is an interpretation of the—I said nothing about production from these leases, I meant it was a logical assumption of sand limits.

Q. By your answer you merely intended to confine your answer as to sand limits, based on the facts disclosed by the top and bottom sand maps which the Plan put in evidence?

A. I think it is a logical interpretation of the top and base maps.

Q. Now, Mr. Murphree, you have made a study of the Applicant's engineering report with reference to the permeability and porosity of sands in the various sectors and segments of the Medrano sand,—I'll ask you to state whether or not it is a fact that the Engineer's report shows the porosity to be uniform throughout each segment?

A. No, it varies considerably.

[fols. 1508-1509] Q. There is a different porosity in the different segments?

A. Yes, segment "A" is low in porosity and "C" and "B" are fairly close together, and these two vary,—"D" and "E" vary from "B" and "C" some.

Q. Now, in determining the amount of oil in place, what was done with the porosities, that is, are the weighted averages shown?

A. There was a weighted average shown, yes.

[fol. 1510] Chairman Bond: Gentlemen, are you ready to proceed.

CLYDE KAHLE, of lawful age, being duly sworn, testified as follows, to-wit:

Reford Bond, Jr. examines the witness:

Q. State your name, please.

A. Clyde Kahle.

Q. Where do you live, Mr. Kahle.

A. Two and one-half miles north of Cyril.

Q. How long have you lived there?

A. About twenty-five years.

Q. How old are you, Mr. Kahle?

A. Seventy years old.

Q. In what business have you been engaged since you came to Cyril and the community?

A. In the oil business.

Q. To what extent?

A. I have been in the drilling and producing business.

Q. Are you the owner of an over-riding royalty interest in part of the Medrano sand area and west Cement field?

A. Yes, sir.

Q. And what lease is that, Mr. Kahle?

A. Walker lease.

Q. What section is that in?

[fol. 1511] A. 1-5-10.

Q. Can you give the description that the Stephens Walker or Anderson-Prichard Walker?

A. Stephens-Walker?

Q. Stephens-Walker.

A. Yes, sir.

Q. Mr. Kahle, are you familiar with the meaning of the

word "field," used in connection with oil and gas in common?

A. Yes.

Q. What is the use of that word in oil and gas relationship?

A. The total field.

Q. By that, you mean that it covers all of the sands underlying an area?

Mr. Williams: I think that that is leading and stating to the witness what he means for testifying about.

Chairman Bond: It's leading.

Reford Bond, Jr. continues with the witness:

Q. Will you please, Mr. Kahle, amplify your statement as to the meaning of the word "field" in connection with oil and gas.

A. As I understand it, it takes in the whole thing of all sands and everything.

Q. State to the Commission now what "field" the Medrano sand is located.

[fol. 1512] A. In the West Cement Field.

Q. Are there other sands in the West Cement Field besides the Medrano?

A. Yes, sir.

Q. About when, Mr. Kahle, was the West Cement field first discovered?

A. Well, I drilled a well in on Mr. Walker's in the field in the fall of 1918 and one also on Mr. Davis.

Q. And were those wells in the West Cement field?

A. Yes, sir.

Q. And they were located in what section?

A. 1-5-10.

Q. Now, Mr. Kahle, you have been engaged in the practice and sale of producing oil and gas leases during your operations and worked in the oil industry?

A. What is that?

Q. You have been engaged in the practice and sale of producing oil and gas property?

A. Yes, sir.

Q. You know the significance of an over-riding royalty interest or 7/8 working oil and gas lease, do you not?

A. I think so.

Q. Now, the particular over-riding royalty interest that [fol. 1513] you own under the Stephens-Walker lease, is there or not, dependent on the working interest in the lease?

A. I don't understand that.

Q. How long does your over-riding remain in force?

A. As long as that well produces.

Q. I will ask if it's as long as the lease is in force.

A. The lease is in force as long as the well produces.

Q. And if that produces from some other sand, it still continues?

A. Yes.

Q. Your over-riding being from what horizon?

A. Everything from 2400 feet down.

Q. Are you aware, Mr. Kahle, under the unitization statute that in the event that the production in the Medrano pool unit operation dropped below the value of the oil and gas produced, all the payment of the over-riding royalty and that your over-riding royalty will become cancelled and revert to the lease?

Mr. Williams: I object to that, because there is no such a thing in the law.

Chairman Bond: I don't know if he's referring to the law or lease.

Reford Bond, Jr.: I am referring to the law and asked if he knows that there is such a provision of law.

Chairman Bond: I don't think that he can testify as to [fol. 1514] the law, you will have to argue that with your client.

Reford Bond, Jr. continues with the witness:

Q. Very well, I will ask him another question. When the production from an oil and gas lease becomes so small that the cost of operation equals the amount of oil, the value of the oil and gas produced to the credit of the operator, state whether or not the over-riding royalty owner has a trading advantage with a lessee in regard to the lease.

Mr. Williams: I think that if the Commission please, the rights of the parties of over-riding royalties will be reflected by the instrument itself instead of this witness's interpretation.

Chairman Bond: The instrument is the best evidence, he is an old oil operator, he can tell if he knows, he should know.

A. (Witness.) I think that a man can take it over and produce it himself.

Q. That, in your opinion, will be the trading advantage that he can take the lease over and produce it himself at a profit where the lessees can't do that.

A. That is right.

Q. Now state to the Commission what your objection is to the unitization of the Medrano sand in regard to this [fol. 1515] treatment of the over-riding royalty interest.

A. Well, I think that it will take my interest out to pay for some other fellow's gas to put in there and it won't compensate me at all, those equities are not right, they don't consider the thickness of the sand nor porosity.

Q. Does this plan compenstate you for the trading value of your over-riding royalty.

A. No, sir.

Q. That is all.

Mr. Williams: No cross examination.

Mark Adams examines the witness:

Q. Mr. Kahle, to clarify the matter as I understand you, in the oil and gas business would you say the West Cement Field, you mean an area under which that has production in one or more horizons of oil or gas?

A. Yes.

Q. And that is without relationship to what particular production horizons that there is in the area.

A. Without relationship to any of it.

Reford Bond, Jr. examines the witness:

Q. And has that always been the meaning that they use in common parlance prior to 1945?

A. That always was.

Witness excused.

[fol. 1516] Mr. Murphree, is recalled to the stand:

Witness examined by Reford Bond, Jr.:

Q. When we adjourned before lunch, I believe you were testifying about the porosity of the oil sand or oil and gas sands in the various sectors of the Medrano sand as included by the applicant's plan, would you examine the engineering report of the applicants which was offered as evidence here and state whether or not there is any difference of porosity shown in the various sectors of the West Medrano sand.

A. That is within the sectors themselves?

Q. No, as between the sectors, I believe that is Table 9, is it not, of Exhibit 71?

A. From Exhibit 71, Sector A, or Segment A, Item No. 2, porosity and core data, Segment A is listed as 15 per cent. Segment B, 17 per cent. Segment C 17 per cent. Segment D, 17 per cent. Segment E, 16 per cent.

Q. Do you know, from your examination of the applicant's data, how it figures, how these figures were arrived at?

A. It isn't stated in the report exactly how they were arrived at, but from what I have been told, they were averages of that area, these averages according some of the tighter sections of the core that they figured would not produce or are too tight to produce.

[fol. 1517] Q. Is that what the applicants' witnesses have termed as weighted averages?

A. I believe so.

Q. State to the Commission whether or not that porosity figure as used in determing the sand thickness is between the various tracts which are sought to be unitized in this proceeding.

A. By sand thickness you mean the sand, the core volume, as used in obtaining the amount of oil in place, what I mean to say is determining the amount of oil in place determined in the applicant's plan. As to the statement the average figure as listed in Exhibit 71, Item 2 is used to determine the oil in place in that segment.

Q. And does each porosity figure, as set up for each segment, used to determine the amount of oil in place in each segment by the applicants?

A. As set up in this report, yes.

Q. It is used as a factor in the formula that is used to determine the amount of oil in place, is that right?

A. Yes.

Q. If the porosity is increased in any particular segment, would that increase the amount of oil which is calculated to be in place in that segment?

A. With each increase in porosity, of course the amount [fol. 1518] of oil in place in that segment would be increased.

Q. In the unit of that figure of the formula?

A. Yes.

Q. And if the porosity were decreased, then accordingly the amount of oil will be decreased.

A. Yes, it varies as porosity varies.

Q. In order to obtain the porosity figures, I believe you testified that the applicants used an average weighted figure, is that correct?

A. They call it weighted average method.

Q. Now, in obtaining or what information or with facts, what facts were used by them in obtaining this porosity percentage in each of the segments?

A. Well, in each segment——

Q. Well, the same was just used in each segment, the same method?

A. Yes, the same method.

Q. And the same type of facts were used to make that determination in each segment?

A. Yes.

Q. Now then, what datum and facts were used by the applicants?

A. Well, they have limited some, I don't know the exact number, but something like 30 points in that core data that [fol. 1519] was used to determine the porosity.

Q. And what do they do with these porosity figures that were obtained from that core data to determine the porosity figure to each segment?

A. As I understand that method, they take the core data and where the porosity is now too low, including all of the vertical section of the cored section of the well to arrive at an average porosity figure for that well and if they had several wells in there, they took that average. They took

the average between the wells where the permeability was very low, that section was excluded as I understand that, and that porosity section was not included, that porous section was not included in the average section of the wells.

Q. Then that average was obtained for the entir section?

A. Yes, if they had four wells in the one area with so much average porosity averaged by the taking of the vertical section, they took four wells and averaged them.

Q. Then they found the porosity of Sections, or rather Segments B, C, D, and E, but Segment A had a lower porosity than other segments.

A. Segment A 15, for B, C, D, had 17 per cent and E 16 per cent.

Q. Now, I will ask you whether or not it would have been more equitable and whether or not the interest of the various tracts should have been more accurately and equitably obtained, had the acreage been figured separate for [fol. 1520] each tract rather than by segments used as a whole.

A. Yes, more accurately and equitably as to the tracts around that well.

Q. Could it have been figured by tracts from the data that they had as well as by factors?

A. Yes, I suppose they could have assigned an area to each cored well that they have and have an average for that area rather than the average for the sector and it would have perhaps been more equitable than an average for the segments.

Q. Had the applicants determined the porosity for each tract separately would that have resulted in a different interest and being finally contributed to the owners of each tract and interest that was attributed to the present plan.

A. Yes, it would have varied as the porosities varied, however, with the data that they have they couldn't have enough for each separate tract to determine separate tracts, like for Segment A, they had 1-2-3-4 wells cored and there are several more tracts and more wells on that. There are 12 tracts in the whole Segment A, so they would not have had core data for each tract, however, they could have assigned one of the cored wells near that tract to that tract.

Q. Would that procedure, in your opinion, been more

equitable and more nearly accurate than the procedure used?

[fol. 1521] A. I believe so.

Q. Now, will you refer to Exhibit 71 again and state to the Commission what that shows, the probability attributed to each segment by the applicant.

[fol. 1522] A. I don't know whether this Exhibit 71 shows the permeability, or not.

Q. I will ask you if it isn't a fact that an arbitrary permeability was shown by the Application and attributed to the Medrano sand?

A. As I gather from what I can find here, the permeability figure was more or less estimated. The figure of 300 millidarcys, which appears on page 4 in this Exhibit 71, was an estimation or guess from looking at all the core data, and was not the weighted average, therefore it's the same permeability figure that was attributed to the sand.

Q. Has the permeability factor ever been taken into consideration in dividing the oil and gas among the persons entitled thereto?

A. The permeability is merely,—it isn't an indication of the amount of oil in place in that sand, so as to the permeability being of any help in increasing the equities, the only thing that can be considered is whether the oil can get to the well bore or not.

Q. Would wells of high permeability tend to be more valuable of,—than wells of low permeability?

A. Under the law of capture it would cause it to be more valuable because it would, it could produce more oil in a given time.

Q. Then, considering the present development of the [fol. 1523] Medrano sand, I'll ask you whether or not in fixing the equities between the parties the permeability of the sand could be taken into consideration?

A. As I understand the formula it was not taken into consideration in the formula for figure equities, and unless you put it in the formula the permeability could not have been used, however, under the law of capture the permeability means much to the property owner or the lease owner.

Q. The permeability was not considered then in fixing the

equities and dividing the oil and gas among the persons entitled thereto, is that correct?

A. It was not used in the 80 percent,—they might contend that it was used in the 20 per cent current income.

Q. Now, the 20 percent of present income was modified by the regulatory order of the Commission, was it not?

A. Yes.

Q. Giving each well a certain allowable?

A. The maximum allowable is 200 barrels a day.

Q. And the open flow of the wells was not considered in making a division between the parties?

A. No.

Q. Should that factor, in your opinion, be considered in dividing the oil between the parties?

A. In this 20 percent factor, I think it should, because the order of the Commission says that well may produce [fol. 1524] 200 barrels a day.

Q. I'll ask you if it isn't a fact that that well will have a longer life than a well which has less favorable conditions underneath it, that is also limited by the same allowable?

A. In the same sand zone, that should be true.

Q. Now, Mr. Murphree, in regard to the point in the top of the structure at which gas should be reinjected in recycling, I'll ask you to state whether or not engineers differ as to the point at which injection should be made in the gas structure?

A. Oh, yes, we have arguments back and forth that way.

Q. I'll ask you to state whether or not those matters are concerned with the propriety or properness of operation?

A. Well, no, that means that one engineer may consider this well a better point and another engineer may consider another well a better point and the only way you will really find out is to try it,—that's the only way I can answer that question.

Q. And you have somebody to make the decision?

A. Well, whether his position was better than the other would be determined after it was tried out.

Q. But in the event one man was to make the decision there would be no argument, would there?

A. That's true.

Q. As a matter of fact, after the matter was arbitrarily [fol. 1525] fixed you wouldn't have any opinion in fixing the method which is probably the best to be devised from all good opinions, is that correct?

A. That's correct.

Examination by Mr. Adams:

Q. Mr. Williams asked you why all the wells producing oil from the Medrano section in the West Cement pool, asked you if all those wells were on the pump,—I believe you said they were?

A. My statement was that all the wells that the Corporation Commission shows an allowable report for were on the pump.

Q. Now, that wouldn't effect your previous answer, would it, that the lifting costs were a factor which were not considered but which should be considered in determining the value which each separate lease might contribute to any Unit?

A. No.

Q. Now, that is true, is it not because of the fact that there could be wells producing from the Medrano section in the West Cement field, perhaps as low as three barrels a day and other wells produce 200 barrels per day, and it would cost as much to lift the three barrels as it would the 200 barrels?

A. Well, it might, I believe, run higher to lift the three barrels.

Q. The cost of lifting the three barrels would cost more [fol. 1526] than 200 barrels?

A. Cost more per barrel.

Q. And in cases where you have water produced with the oil it is higher?

A. That's true.

Q. While other wells producing oil have the necessity of lifting water also and disposing of it or treating the oil, is that correct?

A. Yes.

Q. And it is for those reasons that you believe that factor should be considered?

A. As between the operators, it should, yes.

Q. And you say it makes some slight difference as between royalty owners?

A. That's right.

Examination by Mr. Williams:

Q. Mr. Murphree, I believe there are 72 tracts involved in the proposed Unitization. Do you know how many of those tracts have on them wells from which cores have been taken?

A. They are all listed here on this copy of this Exhibit.

Q. If I were to tell you that the figure was 15 tracts out of 72, would that appear to you to be a reasonably correct statement?

A. Well, let's count them here,—yes 15 is right.

[fol. 1527] Q. Fifteen,—in other words there are fifteen separate tracts on which you have core data and 57 tracts on which you do not have?

A. Yes.

Q. And only fifteen on which you do have core data?

A. That's right.

Q. Now, then, as an engineer, under like circumstances I'll ask you if you wouldn't, involving such a problem as this, use weighted average in order to have the tracts alike?

A. Well, I suppose the engineer who prepared this would go into this having in mind, for instance, could I do this on the blackboard?

Q. Yes, go ahead.

A. These squares represent wells which have been cored (indicating on blackboard). Take this particular well, for instance (indicating on blackboard), if you were to use the data on that well——

Q. Now, name the well, and then the area?

A. On Exhibit 54-R, which is the map of the Medrano sand,—the Gulf-Pell No. 1, that well was cored and they have the core data on it. The porosity was 13.30 percent. Now, it would be much easier to use the core data from the Gulf-Pell, No. 1, from the well to the West, than it is the Stephens-Pell, or the Stephens-Dome-Bo, than to use this well. Then the argument comes up "What shall I use", shall I use the well to the East of the Gulf-Pell No. 1, or [fol. 1528] whether to use the porosity figure on Gulf-Pell No. 1, or come down here and use the porosity figures on

the Gulf-Sherritt 1, or 2 and 4, so the Engineer does have quite a problem.

Q. What is the diameter of the core taken from the Gulf-Pell well?

A. It's less than 3 inches.

Q. Is the Core Analysis taken from that well, would that represent only the porosity and permeability as contained in that three inch zone?

A. That's right.

Q. In other words, you tell the Commission that the use of that three inch core, that determines or has determined the porosity of the well and would determine the porosity better than the use of the average or of the core data?

A. I think it is, because the porosity means the tightness,—over here (indicating on map) it was 14.50.

Q. Well, is there any variation in the porosity between the three wells that were cored in that segment on the Sherritt lease?

A. I don't know,—don't have all the figures here on that lease.

Q. Well, in the porosity of the field,—have you found that there is a uniform, that it is uniform from one point to another?

[fol. 1529] A. No.

Q. Then, in the absence of uniform coring, wouldn't it be better to use the average than to use one core and,—as reflecting what the porosity would be in any one portion?

A. I don't think so.

Q. How can you determine the porosity from a cored well?

A. Well, I know the method is accepted as Engineers,—which is accepted as proper.

Q. That's the method that was used in this case?

A. Yes.

Q. But say you have 15 percent porosity here (indicating on map) and you have some wells here slightly grading to the West,—do you find any evidence of gradation to the West in that section?

A. This well here (indicating on plat) where we had 13.3, the Stephens-Dome-Bo.

Q. What was the porosity of Sherritt 2 and 3,—no, let

me withdraw that question. Mr. Murphree, in all of your testimony in respect to the recovery under these methods of operation, you have laid considerable stress, as I have understood your testimony, upon the continuance in effect of the present order of the Commission, limiting withdrawals of gas from a gas-cap,—am I correct about that?

A. Yes.

Q. What importance do you place on the continuance of [fol. 1530] that Order in effect?

A. Well, to maintain the pressures.

Q. Now, under that Order, Mr. Witness, the withdrawals of gas from the gas-cap are limited to approximately 4½ to 5 million cubic feet per day,—is that correct.

A. Yes.

Q. And under that Plan of Operation isn't this gas to be compensated for that gas that is retained in the reservoir and——

A. There is no method of compensation—wait a minute,——

Q. The gas under the lease would be used to maintain the pressure in the oil and gas zone?

A. That's right.

Q. Now, Unitization is only the manner in which these owners can be compensated,—Unitization is the only manner in which these owners can be compensated for that gas?

A. Yes.

Examination by Reford Bond, Jr.:

Q. Mr. Murphree, are you familiar with the Petroleum Engineer, a Magazine published by this company, (Exhibiting magazine to witness) and in general circulation?

A. Yes.

Q. Is that considered to be one of the oracles of the Petroleum Engineering Profession?

[fol. 1531] A. Well, it's articles are written by various Petroleum Engineers, Geologists, and Physicists.

Q. I hand you the Petroleum Engineer, for August, 1944, and will ask you to turn to page 67, and ask you to state what that is?

A. This article is entitled,—"Method of Approach to Determine the Optimum Spacing of Wells",

Q. By whom is the article written?

A. By N. Van Wingen.

Q. Do you know who he is?

A. I see down here it states that he is the Senior Production Engineer of the Richfield Oil Corporation.

Q. You will note at the bottom of column 2 that the word "Optimum" as used in well spacing is defined,—will you look at that definition and state whether or not in your opinion that is a good definition of the word used in connection with well spacing?

A. Do you refer to the definition of the——

Q. Yes, the definition of the word, "Optimum"?

A. Well, this states that well densities of spacing should be definite enough——

Q. Well, I am asking you about the definition of the word, "Optimum",—there it is underlined with pencil?

A. Well, I want to clarify my answer.

Q. All right.

[fol. 1532] A. He states that the density should be such that the maximum profit by the operators would be realized.

Q. Yes.

A. He doesn't mention the maximum recoveries, so, in general, I agree with him.

Q. What is your definition of it?

A. Of Optimum Well Spacing?

Q. Yes.

A. To get the prestest ultimate recovery without it being too expensive.

Q. Now, Mr. Murphree, I'll ask you to look in the third column of the first page of this article, where you will note a statement underlined, which statement I'll ask you to read to the Commission,—do you see it?

A. Yes, this article states, (reading), "For the purpose of carrying through a sample analysis on a quantitative basis, application was made to an actual California reservoir, the Bell zone of the Sante Fe Springs field, whose characteristics can be considered to be well established due ot its now having reached a realitively advanced stage of depletion."

Q. Now, Mr. Murphree, what is the meaning of the word, "field", as used by the writer of that Article?

A. Well, my conception of the meaning of the writer, he

says "the Bell zone of the Sante Fe Springs field",—the [fol. 1533] Bell zone would include all——

Q. Well, are you familiar with the word, "field", as used in oil and gas common parlance?

A. Yes.

Q. Well, what does it mean?

A. For example, the Oklahoma City field would include all the zones in the field, the word, "field", would embrace the whole surface area that produced oil.

Q. All the sand producing horizon?

A. Yes, that's my conception of "field".

Q. Then the West Medrano sand would be part of the West Cement field, which was discovered back in 1922?

Mr. Williams: Wait a minute,—we object to that question.

Chairman Bond: Sustained.

Q. Would you hand that article to the Reporter and ask him to mark the underlined portion only, as Exhibit 111?

(Reporter's Note: The witness hands the Reporter the publication entitled, "The Petroleum Engineer", and marks, as Exhibit 111 that portion of the article, on page 67, reading as follows:

> "For the purpose of carrying through a sample analysis on a quan-tative basis, application was made to an actual California reservoir, the Bell zone of the Sante Fe Springs feild, whose characteristics can be considered to be well established due to its now having reached a relatively advanced stage of depletion."

[fol. 1534] Mr. Reford Bond, Jr.: Now we offer Exhibit 111 in connection with the witness re-direct examination.

Chairman Bond: Received.

[fol. 1535] Mr. Murphree is on the stand.

Mark Adams examines the witness:

Q. Mr. Williams asked you, Mr. Witness, by restriction on the production of gas in the Medrano section of the West Cement Field would record the time of recovery by the owners of mineral rights by the recovery of royalty to which they would be entitled, wouldn't your answer in that

respect apply equally to restriction of oil production of oil in the oil bearing portion of the area in the same field?

A. Yes.

Q. As you understood it, the purpose of the present order of the Commission as to protecting correlative rights of all persons owning interests in this area, isn't it?

A. As I understood the Commission's purpose, I wasn't at the hearing, as I understood, the purpose was to give each owner the same volumetric withdrawal of gas as well as oil.

Q. You think that that is proper?

A. Yes, I do.

Q. And you think that by following that course that the interest of the various mineral interests under each tract will be protected.

A. Yes, it would.

Q. So you don't think that there is any preference given the mineral interest holders where there is mineral interest [fol. 1536] where the gas is located.

A. No, I don't believe so.

Q. That is all.

Mr. Williams examines the witness:

Q. Mr. Murphree, how long can the 20 gas wells in the pool be operated at a profit with the maximum gas allowable of 5 million cubic feet a day from the pool?

Mr. Adams: We object to that, if the Commission please as long as correlative rights are protected it is not a question if a man can operate his property solely to his profit, that is what we have correlative rights for.

Chairman Bond: That order may not last long, the Commission made its order to protect the rights of the people out there, that is put in force to keep one company from running all of the gas out of the field.

A. (Witness) As to the exact number of gas wells, I haven't counted them, but 5 million cubic feet spilt up among the wells, that is approximately 18 gas wells, that will give each well less than 300,000 cubic feet per day or somewhere near 300,000 feet per day at 5 cent per thousand.

Q. Do you know what the casing head pressure of these

[fol. 1537] gas wells is today, approximately in round figures?

A. About 720 pounds.

Q. And do you know what the pipe line pressure is in the field to which that gas is sold.

A. It's in the neighborhood of 600 pounds.

Q. It isn't going to be very long then until boosters will have to be installed to boost gas into the line.

A. No, sir, that is true.

Q. Can you afford to put in boosters to boost it in the line at 5 cents a thousand at 300,000 per day?

Mr. Adams.: We object to that; the producers will be required to boost the gas.

Mr. Williams: How will it get into the lines?

Mr. Adams: Reduce the line pressure.

Mr. Williams: What is your answer?

Mr. Adams: I object to it.

Chairman Bond: The factors should be asked the witness. Do you know how long it will be before we have to boost it out there, it will put that in a proper question and ask him in a proper way, you can ask him a hypothetical question, how long it will be.

Mr. Williams: He said it won't be long.

Chairman Bond: Do you know how long it will be?

[fol. 1538] A. (Witness) According to a diagram, the pressure will be below 600 pounds in late 1948 and you have to have a little pressure differential to get it in the lines, so in 1948 most of the gas will have to be boosted into a line carrying 600 pounds, if they will maintain 600 pounds.

Chairman Bond: As one of the questions that the Commission wants in the hypothetical question, you can't say that it will be 600 pounds next month or next year.

Mr. Williams continues with the witness:

Q. Are you acquainted with the magazine, Producer's Monthly?

A. I have seen it.

Q. That is one—there is one of the articles by an engineer, petroleum geologist, is it not?

A. Yes. (Mr. Williams shows magazine to witness.)

Q. It's an article and magazine of the oil industry, is it not?

A. I suppose you would classify it as that.

Q. I hand you what has been marked by the Reporter as Exhibit 112, and ask you to state what that is or whether you recognize that as being a photostatic copy of certain pages torn from the magazine to which reference has been made, namely, the "Producer's Monthly."

A. Yes.

[fol. 1539] Q. An article by Mr. Frederick Squires.

A. Yes.

Q. Do you know him?

A. I don't know him.

Q. Do you know who he is?

A. It states here he is a petroleum engineer of Illinois, Geological Society.

Chairman Bond: I think that you should prove that by a witness who knows him.

Mr. Williams: This is introduced by a man under the same authority under which they introduced exhibits.

Chairman Bond: That is by a man that knew him, this witness will have to read the article, if you will state that he is an authority.

Mr. Williams: I don't understand how we will do that unless we use other men that are here.

Reford Bond, Jr.: What we did was introduce men concerning the field being an oil field twenty years before 1945.

Reford Bond, Jr. examines the witness:

Q. Mr. Murphree, in the plan submitted by the applicants, was there any distinction made between the 1/8 royalty interest and 7/8 working interest in the division of the gas that a person was entitled thereto?

[fol. 1540] A. I don't believe there was.

Q. In other words, the oil and gas was attributed to tracts and the royalty owners got their proportionate share of 1/8 and working interest and over-riding royalty owners the balance.

A. Yes.

Q. Now I will ask you to state to the Commission if there

are instances in which the royalty owners' interest will not be the same to the royalty owners' interest with reference to the division of the oil and gas, the way they are entitled thereto.

A. Will you restate that question, I don't understand it.

Q. Well, I will ask another and proceed differently. I will call your attention, for example, to Tracts 67, 68, 69 and 70 which are known as the McClaren leases in the northeast quarter of Section 6 and call your attention to the fact that these leases are not developed, there are no wells drilled thereon to the Medrano sand horizon, now I will ask you if it isn't a fact that under the plan the sand area under these four tracts was determined and arbitrarily divided by two, what was used in connection with determining the amount of oil and gas of owners was entitled to have, is that correct.

A. Yes.

Q. That is the theory of the plan?

A. Yes.

[fol. 1541] Q. Now then, isn't it a fact that the interest of the royalty owners and interest of working interest, owners in working out the amount of oil and gas to be attributed to that tract, had a working interest inasmuch as the lessee has not developed the tract and probably will not have to develop the tract and the royalty owner will get the same amount of royalty under the lease regardless of whether the tracts are developed or undeveloped.

A. Well, it's a fact that Anderson-Prichard and Amerada won't have to pay for drilling a well but will have to pay for an interest in producing interest already drilled and the royalty owner will only get one-eighth of the oil, but the formula divided by the sand volume by 2, before estimating the oil in place.

Q. Now then, with that in mind, I will ask the question I asked first, whether or not the interest of the royalty owner or interest of the operator are always the same when it comes to dividing up the money?

A. Under 1/8? It is.

Q. Do you think that that interest, with reference to the division, is always the same as to whether developed or not?

A. Well, as I stated before, the companies are not going to have to pay out a large sum for development, therefore, the royalty owner will still get his one-eighth, as they figured they cut that royalty in half when they cut the sand volume in half.

[fol. 1542] Q. Now as an engineer, suppose you had a client who was the owner of tracts 67 and 68, the McClaren A and B, Anderson-Prichard leases, and let us assume that there were no wells drilled on either one of those tracts and that Phillips Petroleum Company and others had filed an application with the Corporation Commission to unitize the Medrano pool claiming that a part of the Medrano sand underlay these two tracts here, that fact as disclosed by actual drilling operations being such that the exact thickness of the sand and its porosity and permeability could not be obtained with definite certainty, would you advise your client to take a reduction in the portion of the oil and gas in the unit and enter the unit as a financial proposition rather than to drill wells on the lease themselves to explore and determine actually as to whether that was paying production in the Medrano oil zone under that lease for gas.

A. I believe I stated I would recommend a well on Tract 67, but under the present information, I would not on 68. I would not advise him to take the reduction or cut him in half, now his interest there, I think that it is a better interest than that.

Q. Do you think that the royalty owners under that tract are receiving an equity in sand volume as arbitrarily cut into?

A. No, I don't think so.

Q. Do you think that the fact that no operator would not [fol. 1543] have to drill the tract would be an inducement to agree that this sand volume be cut into?

A. No, that doesn't make him any more money.

Q. Now, under the plan, the operators have tracts 67, 68, 69 and 70, will not have to expend the expense of an exploitation on those tracts, will they?

A. As set forth in Exhibit 1, each man is to share and share alike in the expense of wells already drilled.

Q. Would you advise your client to share in the expense

of the wells already drilled if they could and receive an equal interest?

A. If he didn't take the reduction of 50 per cent it might be a fairly good deal.

Q. If he did take the reduction of 50 per cent which Anderson-Prichard and Amerada have done, will he make money on the deal?

A. The royalty owners?

Q. No, the operators.

A. No, not on tract 67. He would, probably, on the other three tracts.

Q. In other words, then, you think that the allocation as assigned by the McClaren is not equitable.

A. I don't think so, by cutting it in half, I don't think that it shows them in the same category.

Q. Now, calling your attention to Tracts 1, 2, and 3 in the [Vol. 1544] northwest end, defined by dry holes, and I will ask you if the sand volume under those tracts is given the same treatment as in the southeast?

A. If you refer to 50 per cent reduction, they have.

Q. Did you in your opinion, do you, those tracts 1, 2, and 3, I believe will not produce oil, is that correct.

A. They have been tested by Stephens Petroleum Company and will not drill a well and spend $70,000.

Q. They gave those tracts the same treatment as the McClaren Wells have that produce.

A. Yes, they have the same treatment.

Q. And is that the reason that you think that this plan is inequitable?

A. Yes, and another reason is that Stephens-Pell No. 1 doesn't have any oil to its credit in the Commissions records, it doesn't produce any oil, and coming down to Gulf-Pell, they have produced very little oil in the west end, here these are poor wells (indicating), but on the other hand Anderson-Prichard 3a and 4a they are prorated wells, they make more than 200 barrels per day, they are not bad wells. Tract 67 will make a pretty good well with one well drilled on it.

Q. Now, Mr. Murphree, in your testimony with regard to the value of the gas as set up in the applicant's plan at

[fol. 1545] 5 cents per 1000 cubic feet, I believe that is correct.

A. Yes.

Q. I will ask you to give the Commission your opinion as to the equity allowed the owners of the gas in consideration of the fact that the Commission has made an order in the Hugeton field at a minimum price of 7 cent gas.

A. There is no doubt of the shortage of gas and value put on it, that it should be worth as much as Hugeton gas at 7 cents per thousand.

In the event of the Commission's order in the minimum price fixing of gas was sustained, what in your opinion would be the equitable or inequitable treatment of the owners of gas in the plan under this unit?

A. Considering the difference of price of 2 cents there, the gas owners have lost approximately a 2/5 interest.

Q. 40 per cent difference to them?

A. Yes.

Mr. Adams Examines the Witness:

Mr. Bond asked you if the lease operators on some of these outlying tracts under the unit plan will be relieved of the expense of the development, and I believe you testified that he would and the lease operators lost also, by sharing the risk.

A. Yes.

[fol. 1546] Q. And there is considerable risk in developing or attempting to develop the Medrano production in the outlying tracts.

A. Yes.

Reford Bond, Jr. Examines the Witness:

Q. Do you not, in your opinion, believe that the interest in the 7/8 working interest of the 1/8 royalty be fixed separately raised and together in some of the tracts.

A. In some of the tracts?

Q. Yes.

A. No, in these tracts that have been cut one-half, I would think so, yes.

Mr. Adams Examines the Witness:

Q. The unit plan doesn't use in any respect as a factor the consideration of the risk about which I just asked you.

A. No.

Q. That is all.

Mr. Williams Examines the Witness:

Q. Mr. Murphree, figuring the equity to the oil tracts, the price of $1.52 is used.

A. Yes.

Q. As a matter of fact, the price at the present time is $1.85.

A. It is 36 gravity oil and 40 gravity is $1.95 and you lose 2 cents per degree gravity, it's about $1.87, isn't it?

[fol. 1547] Q. Now, the difference between $1.87 and $1.52 is approximately the same as between 7 and 5, isn't that true?

A. No, this difference would be about 22 per cent.

Q. And the ratio will be in favor of the gas?

A. Yes.

Q. As I understand your testimony, Mr. Murphree, although, under unitization, the Amerada will not be required to drill wells on the McClaren lease, they will be required to pay for their proportionate interest in the entire field development to date and also their interest in future wells.

[fol. 1548] A. I stated that in my testimony.

By Mr. Bond:

Q. But they wouldn't be required to pay for any dry holes if any had been drilled, would they?

A. No.

Q. They are all good producing wells?

A. Yes.

Examination by Mr. Williams:

Q. Do I understand you to say that the Stephens Petroleum Company drilled the Dome-Bo well?

A. I believe Cities Service drilled the well.

Q. Isn't it a fact that Cities Service Company purchased that lease after the Dome-Bo well was drilled and abandoned?

A. Well, I don't like to talk about operators, but——

Q. Well, my question is, the Stephens Petroleum Company bought this lease after that?

A. Well, that's true.

Examination by Mr. Adams:

Q. You don't know whether they paid any substantial amount for it, do you?

A. I don't know anything about that,—I know I. P. I. O. drilled the well and it is now Stephens property.

Mr. Reford Bond:

Q. Stephens may have had an interest in it when I. P. I. O. drilled it, for all you know?

A. That's true.

Witness excused.

[fol. 1549] Wayne Rowe, called as a witness, being first duly sworn, testified as follows:

Direct examination.

By Mr. Reford Bond, Jr.:

Q. State your name, please?

A. Wayne Rowe.

Q. Where do you live, Mr. Rowe?

A. In Caddo County, about 26 miles Northwest of Lawton.

Q. What is your business?

A. Livestock.

Q. How old are you?

A. Forty.

Q. You have control and own an interest in the May C. Rowe land in the Southwest of the Northeast of 36-10-6?

A. That's right.

Q. Mor. Rowe, are you one of the protestants in this matter?

A. I am, yes.

Q. I'll ask you to state to the Commission if you know the amount of the,—first do you know the meaning of the

word, "field", as used in speaking of oil and gas in common parlance?

Mr. Williams: Oh, we object to that,—this witness has qualified as a livestock man.

Chairman Bond: You might qualify him further, he hasn't answered yet.

A. I do.

[fol. 1550] Chairman Bond: You might ask him further, —he says he knows.

Q. What is the meaning of the world "field", as used in connection with oil and gas in common parlance?

A. Well, it would be the surface area that is underlain with oil and gas structure.

Q. I'll ask you whether or not, in common parlance, it would include all the producing oil and gas sand under a particular surface?

A. It would, yes.

Q. Now, Mr. Rowe, I believe Mr. Murphree testified that about two and a half acres of your forty acre tract has been included within the applicant's plan as lying within the Medrano zone?

A. That's right.

Q. You have other producing wells on that particular forty acres, I believe?

A. Yes, we have.

Q. Do you know from what sands they are producing?

A. The Fortuna sand, the Rowe sand,—I believe there is another one or two but I don't know the names,—there is a series of sands.

Q. Do you know how much is attributed to your lease?

A. It would amount to about $2.00 a month.

Q. Do you know how much that would be for the entire [fol. 1551] life of the pool or field?

A. It would figure out between $400.00 and $500.00.

Q. I understand that under the terms of your lease it expires when oil and gas is no longer produced in paying quantities?

A. That's my understanding of the lease, yes sir.

Q. Now, are you familiar with the price usually paid for

bonuses on leases in surrounding areas which are underlain by the Medrano sand?

A. No, I don't believe I am familiar with that.

Q. You are not familiar with those prices?

A. No.

Q. Now, will you please state to the Commission whether or not you want this little piece of land included in the Medrano Unit?

A. We do not want it included. And I am speaking for my mother and my sister,—we are joint owners of the property.

Q. I'll ask you to tell the Commission why?

A. Well, if there's only that small part there we are entitled to we don't feel that we are entitled to have it in there, and we do feel that there is a deeper sand there to be developed and that little ten acres in this Unit would hinder that development.

By Mr. Adams:

Q. When you say you speak for your Mother and Sister, you also speak for yourself?

A. That's right.

[fol. 1552] Q. When you say this might hinder development, you might hinder the development of lower horizons?

A. That's right.

Examination.

By Mr. Williams:

Q. Is this tract the only tract you are interested in?

A. I don't believe I understand you.

Q. You testified to your interest in the May Caddo-Rowe?

A. Yes.

Q. Are there any other tracts in that field in which you have an interest?

A. Only in that one quarter section.

Examination.

By Reford Bond, Jr.:

Q. Mr. Rowe, is there any other statement you want to make to the Commission other than the statement you have made,—if so, go ahead?

A. I don't believe, if the Commission please,—I don't believe the royalty owners, are the land owners, I should say, are going to be well pleased with this Unit Operation. I believe the- would rather have the other type of operations, that they have been used to.

Q. Is that all?

A. That's all.

By Mr. Adams:

Q. Your last statement, is that of the reason that you [fol. 1553] have a contract,—your lease sets forth a contract and you feel that you ought to be permitted to deal directly?

A. Yes, that's right.

Q. And you couldn't deal directly under Unitization?

A. That's right, you lose contact.

Witness excused.

[fol. 1554] Jim Holland, called as a witness, being first duly sworn, testified as follows:

Direct examination.

By Reford Bond, Jr.:

Q. State your name?

A. Jim Holland.

Q. Where do you live?

A. Crowley County, Colorado.

Q. Are you the owner of one of the leases in the West Cement Medrano field?

A. Two of the leases.

Q. Mr. Holland, which lease is it that you are interested in?

A. The Phillips-Margaret and the Gulf-Holland,—32 and 33 I believe, the tracts are.

Q. Now, Mr. Holland, are you one of the protestants in this matter?

A. I am.

Q. Do you know the meaning of the word, "field", as used in connection with oil and gas in common parlance?

A. When I worked in the oil fields twenty some years ago, it applied to the surface area where oil was being produced or had been produced.

[fol. 1555] Q. Is that your definition of the word, "field", used in connection with oil and gas in common parlance?

A. As an oil field, yes.

Q. I'll ask you to state whether or not the word, that word, "field", would include all of the area underlain with oil and gas?

A. I believe so. When I worked at West Cement field twenty years ago it was the West Cement field and it is still West Cement today.

Q. Now, Mr. Holland, you are objecting to the inclusion of your land in this Unitized area and you are objecting to the Medrano sand as being Unitized,—will you tell the Commission why?

A. Well, for many reasons. I might state that I am not opposed to Unit operations, if it can be done fairly and with the consent of the land owners, such as was done in the field, in Louisiana and over at Schuler field, in Arkansas, but I am very much opposed to this present plan.

Q. Can you state what particular features of the Plan you object to?

A. Well, there are many, but I will state a few. It was forced upon us without any regard to our rights in the matter, and it isn't fair and equitable, I don't believe. We people up here in this corner,—over here are five wells [fol. 1556] (indicating on plat),—the Stephens-Gulf, the Pell-Gulf, the Pell-Stephens, and Stephens-Brown and the Stephens-Odla-thale, and Stephens-Dome-Bo, about three hundred and twenty acres of land has been allocated about 3,000,000 barrels of oil. We find a dry hole here (indicating on plat) a dry hole (indicating on plat),—down here is the

Stephens-Pell well,—these wells are given an allowable of 3,500,000 barrels.

[fol. 1557] These people up here (indicating) will furnish the oil for the Noble experiment, they want to know where that is coming from and I might add that Gulf lease,——

Q. That is Gulf-Margaret?

A. Gulf-Holland well, we have the Phillips-Holland well and it made its allowable according to the figures in the last plan at $98.90 per day.

Q. What well?

A. Amerada-Hartshorn No. 2, according to figures in the plan it made $98.90 per day in a few months, after I went to the Gulf man and asked for an offset and he told me that they did not have the necessary equipment and that they had to have a heavy duty rig and the heavy duty rigs were at West Edmond field, and because of the war effort they were being drilled out there and, of course, I figured that we were all interested in the War effort and didn't say anything, and now I have been forced to sit here and listen to all of this and I heard an attorney say they would have them if they didn't plan it.

Mr. Lowe: Who made that statement?

A. A Mr. Adams who has an office in the Apco Tower on the 32nd floor, he bought the lease.

Mr. Lowe: What is his name?

A. Mr. Adams, that will perpetuate that lease and after I talked to Mr. Adams, we in our family held a family [fol. 1558] conference, there are five that own ⅞ of the ⅛ royalty and we decided that we would let the lease run out if Gulf didn't want to drill it and drill it again; our parents had received about $200 per acre since 1921 and now we find that under this plan it will perpetuate it forever and give a few dollars and when you take the allotment and figure it up on the Magnolia and ours and compare it with others like Tom Walker, there is a big difference then and I have a whole notebook here that I put down for several months, but if I talked on and told all of them, we would be here when it starts snowing.

Reford Bond, Jr., continues with the witness:

Q. How many wells drilled on Phillips-Margaret?

A. One.

Q. What size is that lease?

A. 80 acres. There is 1 and 59/100, it lacks 1 and 59/100 being a full 80.

Q. The one well on that lease is an offset to what well?

A. The Palmer well north and Phillips Hartshorn east.

Q. That is the well on the Phillips-Oaks that is off to the northwest to your 80?

A. Yes, sir.

Q. Has there been any well drilled to offset that well?

A. In the Medrano sand there was a 2400 foot well on that corner.

[fol. 1559] Q. The lease was given as 80 acre producer on your land?

A. Yes, sir.

Q. I will ask you to state if your lease was fully developed.

A. It was not.

Q. Have you been advised about that?

A. Engineers and lawyers, yes.

Q. And you make that statement on that advice?

A. Yes.

Q. The Gulf-Holland has no well at all?

A. None whatsoever.

Q. And never developed?

A. Never have been drilled.

Q. And you have not received any royalty?

A. No royalty.

Q. What is the primary term of the Gulf-Holland lease?

A. Five years.

Q. What is its expiration date?

A. We have two leases with the Gulf and I believe one runs out in March and the other in December, 1948.

Q. And unless the Gulf drills on that 80 acre lease, you will get your lease back at the end of the year?

A. Yes. I said that we have two leases, the other Gulf lease is 6-10, I am confused about the date, but the lease [fol. 1560] is here in the court room, it is the 16th of December, 1943, that was when the lease was given.

Q. You would rather have your primary term expire on its regular date unless it has some development on the lease to justify extension of that and not to take the money offered to come in the unit operation.

A. Yes, we decided to do that instead of bringing court action against Gulf.

Q. Is there anything else?

A. I could take up the Commission's time in speaking against this and against the law, this law has many, many things about it that the average lease holder and land owner doesn't like and we find out more all the time, we understood all the way along and heard some lawyers plead before the Senate Committee to leave this law for the good judgment of this court, that they would see that they would do what was right and not to tamper with it because it would be a reflection on this Commission, two weeks ago, I heard some of the same lawyers plead that this Commission, in the West Edmond hearing, had no jurisdiction, they could take it or leave it and get it one way or the other, it occurs to me it not only hangs the royalty owners, but hamstrings the Commission, and that is what I think—it should be tossed out the window and it seems that 10 per cent of the people can't come to the Commission and [fol. 1561] this lawyer was pleading that this plan was set up and put in operation to be operated no matter what the Commission says until 10 per cent of the operators come in, and on the other hand 90 per cent of us come in, you will be powerless to help us on any law of secondary recovery, thousands and thousands of dollars lost in 20 years and they will not agree and this is an old deal and certainly needs secondary recovery and this field might come in under it, and there is many, many things about this plan of operation we have our lease, the Company came out and bought and paid for it and we were satisfied and apparently they were satisfied; we are asked to trade this lease for a pig in a polk. It's very undefined about what they will do before I consent to surrender that lease, we should be given a contract either as individuals or as a whole stating what they will do or not do. There are many things, I could talk along here indefinitely.

Q. Is that all you care to say to the Commission at this time, you still leave all the answers out in your pleading.

A. That is all at this time.

Mr. Adams: Mr. Holland, this mineral interest that you own in this area under discussion arises by reason of your royalty interest.

A. We own the surface.

Q. In addition to surface, you own minerals to which you referred?

[fol. 1562] A. Yes.

Q. How long have you and your family owned the real estate rights?

A. Since 1906.

Q. And this property has been or these farms or farm land has been in your family for over 40 years?

A. Yes, sir.

Q. And has some member of your family farmed this land during this time?

A. For a great many years, not all of the time however, but for a great many years and is still the home of one member of the family.

Q. And as I understand it, you only sold to other parties 1/8 of your mineral interest?

A. Some of the family did, a small amount sold 1/8 of 1/8, that is sold.

Q. And all the rest of the members have assumed the interest to the extent of their interest as developed in the West Cement field for oil and gas production?

Mr. Williams examines the witness:

Q. Your interest in the West Cement field is royalty interest in tracts 32 and 33?

A. Yes.

[fol. 1563] Q. 32 leased to Phillips Petroleum Company?

A. Yes.

Q. And 33 to Gulf?

A. Yes.

Q. I believe you testified that Tract No. 1 will bring the only well in the Medrano on the Magnolia well in Tract 32 being an offset to the Sturba here to the north.

A. It is an offset, when it was drilled there, that has been changed under the P.A.W. and under the present order of the Commission.

Q. It is No. 1 Sturba at the time it was drilled?
A. Yes.
Q. What adjacent well has not been offset?
A. The Phillips-Oaks Nos. 2 or 3.
Q. Phillips-Oaks No. 2?
A. In the northeast section of 34.
Q. That is the immediately northwest corner of your tract?
A. Yes.
Q. And it's your contention that you are entitled to an offset well and your property is being drained in here (indicating) not having it?
A. Yes.
Q. I am talking about absence of unitization.
A. Yes.
[fol. 1564] Q. And that the drainage of Phillips-Oaks No. 2, that you are entitled to an offset well?
A. Yes.
Q. And that is true even though Phillips No. 2 is west of the Sturba fault.
A. Yes, because this plan of unitization doesn't admit that that well is there and that it is a 3.1 common source of supply.
Q. I was not asking you that, I was asking about your opinion of the facts. That is all.

Mr. Adams examines the witness:

Q. It either is or it isn't one common source of supply?
A. Yes, personally I believe it isn't and there is another reason I object to that plan of unitization, they say that there is no—down and yet they admit that it's a stone-throw of 600 feet of the line.

Witness excused.

[fol. 1565] Whereupon, Mr. O. Lindsey, of lawful age, being first duly sworn, testified as follows, to-wit:

Reford Bond, Jr., examines the witness:

Q. State your name to the court.
A. O. Lindsey.

Q. Where do you live?
A. On my homestead in West Cement field.
Q. What section is that now, Mr. Lindsey?
A. Southeast 36-6-10.
Q. Is your land underlayed by the Medrano sand?
A. Pardon?
Q. Is the Medrano sand under your farm?
A. I suppose so, they have gotten a gas well.
Q. You are one of the protestants in this matter, are you not?
A. I am.
Q. Do you wish to state to the Commission what your objections are to the unit plan?
A. Well, there is just too much discrimination between the royalty owners and the operators, it takes our rights from down there and everything else.
Q. Did you give them a lease on your land?
A. Did I?
Q. Yes.
[fol. 1566] A. Yes, sir.
Q. Who owns it?
A. Magnolia.
Q. Have they drilled all of the wells that they should drill under the covenants of that lease?
A. No, not on the south.
Q. You have examined the plan that has been submitted by the companies as to how much money you will get in case this plan is authorized?
A. Well, in a way.
Q. Will you get as much under the plan as you get now and have been getting?
A. No, not by any means.
Q. Do you know what the word "field" means when it's used in connection with oil and gas in common parlance?
A. I can't say that I do.
Q. You don't know?
A. I can't say that I do.
Q. Is there any statement that you would like to make to the Commission at this time about your objections to the unit plan?
A. I believe not.
Q. That is all.

Mr. Adams examines the witness:

[fol. 1567] Q. How long have you owned that land, Mr. Lindsey?

A. Since 1908.

Q. Do I understand you to say that you homesteaded?

A. I bought it from the state.

Q. That is your home?

A. Yes.

Q. You have farmed it all the time since then?

A. No, not all the time, but I have had a home there all the time.

Q. You feel that if this plan is put in effect it's like reaching down in your pocket and taking money out of your pocket for someone else?

A. I figure that I will have to go to making rails for a living.

Witness excused.

[fol. 1568] Thomas B. Walker, of lawful age, being first duly sworn, testified as follows, to wit:

Witness examined by Reford Bond, Jr.:

Q. State your name to the Commission.

A. Thomas B. Walker.

Q. Where do you live, Mr. Walker?

A. Caddo County, Section 1-5-10.

Q. How old are you?

A. I was 66 the 7th of March.

Q. Does the Medrano sand underlie your land, Mr. Walker?

A. I have no idea it does, I have two wells that they say is in it.

Q. Is it leased?

A. Yes.

Q. Who has your lease?

A. About three. Stephens has interest in the east 40 and the Rexall and Bob White and Anderson-Prichard has the west 40.

Q. How many wells on west 40 to the Medrano sand?

A. One.

Q. Is it an oil or gas well?

A. Oil.

Q. Is that the only well to the Medrano sand on your west 40?

A. Yes, it is.

[fol. 1569] Q. You think that the Anderson-Prichard Company has fully developed your lease and drilled as many wells as you are entitled to have?

A. No.

Q. How many wells do you have on the east forty?

A. One.

Q. That is to the Medrano sand?

A. Yes.

Q. Now, is that a pumping or flowing well?

A. Flowing well.

Q. Has it ever been on a pump?

A. Not to my knowledge.

Q. Never has?

A. No.

Q. Is that the only well that is drilled to the Medrano sand on the east forty?

A. Yes.

Q. Do you feel that the Stephens Petroleum Company has fully developed your east forty to the Medrano sand?

A. No, and because this well is nearly on the west side of the forty and there is 45 acres and no well and there is one to the south and one to the east that is to the Medrano sand.

Q. Are they producing?

[fol. 1570] A. One is a gas well, it is on the Davis lease.

Q. Now then, Mr. Walker, do you know how much money you will receive a month under this unit plan if it's placed in operation?

A. No.

Q. But if your leases were full developed, you would — twice as many wells?

A. Yes, sir, I should have.

Q. Are you familiar and do you know the meaning of the word "field" when it's used in connection with oil and gas in common parlance?

A. Yes, I think I do.

Q. What does it mean?

A. It's a tract of land with oil and gas produced under it, that is what I always thought that of Cement field east and west where oil and gas was found.

Q. Does that include all the sands underlying the area?

A. Yes.

Q. And all the producing horizons?

A. Yes.

Q. Now, Mr. Walker, tell the Commission whether or not you are in favor of this unit plan as proposed by the proponents.

A. I am not.

Q. Do you want to tell the Commission why?

[fol. 1571] A. Yes.

Q. All right, you tell them your objections.

A. I'm of the opinion that it's not fair to one and all, it won't hurt me and it's not fair, my grandchildren and children are the ones I'm looking after and if we don't have a contract so we can know what we are going to do, the royalty owners are not considered at all.

Q. If you had the right, would you ask to defeat this unit plan?

A. Sure I would.

Q. If you have the right, you intend to defeat it?

A. Yes, what I want is my whole lease, my 80 acre farm developed. I don't want something of the other man's and don't like the other man to get anything of mine and don't think that other men want anything from me.

Q. Have these companies offered you any compensation to have the other wells on there?

A. No.

Mr. Adams examines the witness:

Q. How long have you owned the land, Mr. Walker?

A. Since 1916.

Q. You would like to pass it along to your children and your grandchildren?

A. Yes, it's not me I am working for, it's for the benefit [fol. 1572] of the other generation, not for me but for the children and the commonwealth.

[fol. 1573] Examination.

By Mr. Williams:

Q. Mr. Walker, I believe you testified that your interest in the West Cement Medrano field is fee, and also an interest under 80 acres of land?

A. "Fee," what do you mean by "Fee"?

Q. You own the surface?

A. Yes.

Q. Also a royalty interest under that tracts?

A. Yes.

Q. That's the South Half of the Northeast of Section 1?

A. Yes.

Q. Do you have an interest in that,—any other interest than that?

A. No, that's all.

Q. And that forty is under lease to the Phillips Petroleum Company?

A. And Rookstool, and others.

Q. And your other forty is under lease to Anderson-Prichard?

A. Yes, the same concern.

Witness excused.

[fol. 1574] L. M. Davis, called as a witness, being first duly sworn testified as follows:

Examination by Reford Bond Jr.:

Q. State your name, please?

A. L. M. Davis.

Q. Where do you live, Mr. Davis?

A. I live in Caddo County, two and three-quarters miles North of Cyril.

Q. How old are you?

A. 71.

Q. Do you own a farm in the West Cement field, that is underlain by the Medrano sand?

A. What was that?

Q. Do you own a farm in the Medrano pool area?

A. Yes.

Q. Where is your land located?

A. In 6-5-9.

Q. How many acres?

A. 80 acres.

Q. Is that the South Half of the Northwest Quarter of Section 6?

A. Yes.

Q. Who has a lease on your land?

A. Well, I let—— Have it and he later sold his rights [fol. 1575] — Anderson-Prichard.

Q. How many wells do you have there on your land to the Medrano sand?

A. I have one.

Q. Is that an oil or a gas well?

A. Well, they call it a gas well,—they shot the sand below the oil and above the oil and got a gas well.

Q. Is there any oil?

A. They show it the same as on the Prentice and on the Pickard.

Q. Are you familiar with the word, "field", as used in oil and gas parlance?

A. Yes, I think I am.

Q. What does it mean?

A. It means that it takes in the whole field, the Medrano sand part and the whole field, the Medrano sand part and other sand besides the Medrano.

Q. You mean it includes all the surface area and includes all the sand that's under it?

A. Yes.

Q. Has your lease been fully developed by Anderson-Prichard?

A. It has not.

Q. It has not?

A. No, sir, not by a long ways. We have been begging and pleading with them for two years.

Q. Do you have a regular 88 oil and gas lease on your land?

[fol. 1576] A. Well, Noble-Olson has ten acres and Anderson-Prichard has seventy.

Q. Your lease is a regular 88 form lease, is it?

A. Yes.

Examination by Mr. Adams:

Q. How long have you lived down there, Mr. Davis?

A. Well, I have been down there thirty-eight years last Christmas.

Q. You have owned that land all that time?

A. I have owned it about twenty-one years.

Examination by Mr. Williams:

Q. Mr. Davis, your interest in the West Cement Medrano field, as I understand it, is the South Half of the Northwest of 6-5-9?

A. Yes.

Q. Your interest in that tract is both a fee interest, that is the surface rights——

A. Yes.

Q. —and a contract on the minerals?

A. Yes.

Q. Now, do you have any other interests in the West Cement Medrano field, other than the interest I have mentioned?

A. No.

[fol. 1577] Examination.

By Reford Bond, Jr.:

Q. Mr. Davis, care to make any statement to the Commission about whether you favor this Unitization program, or not?

A. Well, I am not in favor of that Unitization in any way.

Q. Do you mind saying why?

A. Well, because it isn't right, it's against the Constitution of Oklahoma and the United States.

Q. You feel like it is taking your property without paying you for it?

A. Yes sir,—my lease calls for 1/8 and they want to take it and scatter it all over that country,—it aint right, it aint just. They will get my royalty, about $245.00 a month and I am not in favor of no such a law.

Witness excused.

[fol. 1578] L. L. Edwards, called as a witness, being first duly sworn, testified as follows:

Direct examination.

By Reford Bond, Jr.:

Q. State your name?
A. Edwards, L. L. is my name.
Q. Where do you live?
A. I live North of Cyril, four miles, and a half mile West.
Q. How long have you lived in that community?
A. I have lived in that community about thirty-five years.
Q. How old are you, Mr. Edwards?
A. I am 76, will be next November.
Q. Do you own some land, a farm in this area out there in the Medrano sand area?
A. Yes.
Q. Whereabouts is it located?
A. Well, it's the Northwest Quarter of Section 1-5-10.
Q. How many leases do you have on your land?
A. Well, there is 160 acres and I have sold some royalty, the Magnolia has a lease on part of it, the Magnolia has a lease on 80 acres and on a forty.
Q. The Magnolia has the East 80?
A. Yes.
Q. And the Northwest 40?
A. Yes.
[fol. 1579] Q. And who has the lease on the Southwest 40?
A. Amerada.
Q. How many wells has Magnolia drilled on the Northwest 40?
A. Well, it'll be,—they drilled one to the Medrano sand.
Q. That's what I mean?
A. Just one.
Q. Do you feel that they have fully developed that lease, that forty-acre lease?
A. No, I don't think they have.
Q. What kind of a well is it?
A. Well I think it's a pretty good well and it might——
Q. Is it an oil well?
A. Yes.

Q. How many wells has the Magnolia got on the East 80?

A. They have had two.

Q. What kind of wells are they?

A. Well, they made a little gas and a little oil, not much of either one.

Q. Do you think they have fully developed your East 80?

A. Well, I don't think they have.

Q. How many wells has Amerada drilled on your Southwest 40?

A. Just one.

Q. What is it, an oil or gas well?

A. Oil well.

Q. Is it pumping or flowing?

[fol. 1580] A. Pumps.

Q. Now, do you think they have fully developed that Southwest 40?

A. Well, I don't think so.

Q. I'll ask you to state whether or not Amerada has a lease over in Section 2, the Hartshorne lease which is across your West line?

A. Yes, Amerada owns that too.

Q. Is that draining oil out from under your land?

A. Well, I shouldn't wonder if it isn't,—I think it is.

Q. Have you got a well to offset it?

A. No, Amerada is closer to the line than mine.

Q. Your well is on the East side?

A. Yes, in the Northeast corner. Amerada has one in the Northeast corner on other property.

Q. Mr. Edwards, do you know what the word, "field", means, when it is used in connection with oil and gas in common parlance?

A. No, I never heard that brought out until I heard it here and I am not familiar with it.

Q. I'll ask you whether or not you know whether you will get as much money under this proposed plan as you have been getting from your property?

A. Well, from what I heard here Friday, there won't be much difference. But I will probably lose on the West 80 but make up some on the East.

[fol. 1581] Q. Well, if you had the wells you are entitled to have, if they had fully developed your property, and you

had twice as many wells, you would get twice as much money, wouldn't you?

A. I think so, yes.

Q. Is that the way you feel about it?

A. That's the way I feel about it.

Q. Are you in favor of this Unitization Plan?

A. I don't think it's fair, and my neighbor might favor it, and it might be all right for him. I have a neighbor that they gave ten acres in this Unit and if he doesn't have any of that Medrano sand he is not entitled to it. I have an 80 in Section 25——

Q. Is that the Pickard-Edwards?

A. Yes.

Q. Do you prefer to have that Pickard-Edwards 80 left out of the pool?

A. Well, if the pool goes through, I would.

Q. Is there anything else, Mr. Edwards, you would like to say to the Commission about why you object to this proposed Plan?

A. Well, I don't know, the other boys have explained it, I don't think I could add anything, but I just want to state that I am opposed to it because I don't think it is a fair deal, and everybody else can make their statement about it, themselves.

[fol. 1582] Examination.

By Mr. Adams:

Q. How long have you owned that land there, Mr. Edwards?

A. I have owned it ever since 1912, 35 years.

Q. Did you get it the hard way?

A. Yes, I paid for it.

Examination by Mr. Williams:

Q. Your interest in this field consists of two tracts, the Northwest of 1-5-10 and also an interest in 80 acres, being the West Half of the Southwest of 25-6-10?

A. You're right,—that's right.

Q. And you own both the fee or surface interests and the royalty interest?

A. Yes.

The Witness excused.

[fol. 1583] Mrs. E. W. Jones, called as a witness, being first duly sworn, testified as follows:

Direct examination

By Reford Bond, Jr.:

Q. State your name, please?

A. Mrs. E. W. Jones.

Q. Where do you live?

A. Anadarko.

Q. Do you have an interest in any of the land in the West Medrano sand in the West Cement field?

A. I do, I have a ¼ interest in 33-6-10.

Q. Who has a lease on that land?

A. The Gulf Oil Company.

Q. What part of 33 is your land in? Is it the Northeast or the Southeast?

A. Yes, Northeast.

Q. Known as the Palmer lease, no, the Sherritt?

A. Yes, the Sherritt.

Q. That's the Northeast of 33?

A. Yes.

Q. Known as the Sherritt lease?

A. Yes.

Q. How many wells have been drilled on that lease?

A. Four.

[fol. 1584] Q. Are they oil or gas wells?

A. Oil,—three are flowing and one is on the pump. Now, I haven't seen them for probably two or three months, but's the way they were doing at that time.

Q. Mrs. Jones, do you feel that four wells on your 160-acre lease has fully developed that lease?

A. No, we have had a promise of more wells, however, the heirs, we heirs, are pretty well satisfied,—however, if we are due more wells, I would like to have them, but they are very

good wells and I think we can keep them that way and not enter this pool,—we are fairly well satisfied.

Q. You are satisfied with the Gulf's operation on your lease?

A. Yes, we are not rushing them, pushing them, we think we'll get some more wells some day.

Q. Do you have any other objection to the Unitization of the Medrano sand area, which you would like to tell the Commission about?

A. Oh, My!, I am opposed to it, just opposed to it.

Q. Would you mind telling why?

A. Well, I think it is,—it's just this way,—they take our property from us,—this is a free country and then they take our property, we have no voice, no vote or anything,—I can't see how it is fair, we can't do anything, I don't see any fairness about it.

Q. Were you called upon or consulted about this Unitiza-
[fol. 1585] tion matter before the matter was worked out?

A. Oh, no, nothing about it.

Q. Were you invited to join or send a representative or to attend any of the conferences had about it?

A. No, not at all.

Q. Were you ever asked about signing any agreement to Unitize?

A. No, that's what hurts,—I didn't think the Gulf Oil Company would do us that way, but they just disregarded us in every way.

Q. Is there in,—anything else you would like to have the Commission know about this?

A. Well, there has been so much said that I don't know how I could add to it. You know how we feel about it, I can't see why the Companies would want to Unitize that field, I don't see the fairness of it.

Examination.

By Mr. Adams:

Q. Mrs. Jones, you are,—were a Sherritt?

A. Yes.

Q. This land has been in your family for many years?

A. Yes, my parents bought it before this well was discovered, I think in 1915.

Witness Excused.

[fol. 1586] Ben Holland, called as a witness, being first duly sworn, testified as follows:

Direct examination.

By Reford Bond, Jr.:

Q. State your name?
A. Ben Holland.
Q. Where do you live?
A. My Post Office is Anadarko.
Q. How old are you?
A. I was born in '99, so I guess I am about 48 years old.
Q. Do you have an interest in land which is underlain by the Medrano sand in this field?
A. ⅓ interest in 2-5-10, which land is leased to the Phillips Petroleum Company, the North 80 is the Phillips-Margaret lease and the South 80 is leased to the Gulf and is known as the Gulf-Holland.
Q. Is there a well on that land?
A. No. 1 Margaret, yes.
Q. That's the Phillips lease.
A. Yes.
Q. Is there a well on the Gulf lease, at all?
A. No.
Q. Do you know when that lease expires?
A. Well, it has a little over eight years,—it has a little over a year to run, and since oil and gas is produced in paying quantities,—unless oil and gas is produced in paying [fol. 1587] quantities.
Q. Now, Mr. Holland, do you feel that the Phillips Petroleum Company has fully developed the North 80?
A. No, I do not.
Q. Have you been advised about that by geologists or petroleum engineers?
A. I have, yes, they,—very well.
Q. And you make that statement on their advice?
A. Yes.

Q. Do you know the meaning of the word "field", in connection with oil and gas parlance?

A. Well, I have worked in a lot of fields in Oklahoma and California.

Q. Can you tell us the meaning of the word, "field",?

A. Well, you might say the Long Beach Field, in California, or the West Cement field.

Q. Well, would you say the word, "field", includes all of the oil which,—all of the area,—that is it includes all the oil and gas that underlies the surface?

A. I think that has been the accepted theory.

Q. Now, you were one of the protestants in this matter, you are a protestant in this matter?

A. Yes.

Q. Do you wish to state to the Commission why it is that you are protesting?

[fol. 1588] A. Yes, I have several objections,——

Q. Do you wish to make a statement of your reasons?

A. Yes,—one of my objections is to what they call "Select Wells", where they are going to put these wells,—I suppose they have a pretty good idea where they are going to put these wells, but they haven't said,—I have a pretty good idea and I have an idea that the royalty owner is going to be left on the outside in a good many places,—I think from the standpoint of the royalty owner it is unfair,—I think the Commission should go between the royalty owner and the operator and tell the Operator to give the royalty owner a fair deal. I just wonder how the royalty owner would take it or how they would be effected if the Commission should shut down the field entirely for a year or two. I have seen it in my experience.

Q. Mr. Holland, you have given the Phillips Company and the Gulf Company a regular 88 producers lease on that land?

A. Yes.

Q. I'll ask you whether or not Phillips has complied with the terms and conditions of their lease?

A. I don't see how they have.

Q. Well, do you say they have or have not?

A. I say they have not.

Q. And that is the advice of your petroleum engineer?

A. Yes.

Q. Why haven't they complied?

[fol. 1589] A. They have not drilled on the Northwest 40.

Q. Now, why is it that you don't want this South 80 included in the Plan?

A. Well, we would have a nickel, dime or a quarter at a time and I don't see how there would be anything in that.

Q. You think you would get more money out of it otherwise, than if it was included in the Unit?

A. Yes, I do.

Examination.

By Mr. Williams:

Q. Do you know how many royalty owners there are in the West Cement Medrano field?

A. I imagine there are quite a number.

Q. Do you know just how many?

A. No, there might be several hundred.

Q. Your interest in the Medrano field is the same as that testified to by your brother?

A. Yes.

Examination.

By Reford Bond Jr.:

Q. Is there anything else you want to state to the Commission?

A. Well, I would like to give my personal opinion, which would differ from what the engineers and geologists have been saying.

Q. Go ahead.

[fol. 1590] A. I'll take my chances on it about what is underneath the surface,—it seems to me that there was an encroachment of gas across the structure——

Chairman Bond: Well, you want it properly distributed, don't you,—you don't want one man to have it all?

A. That's right,—I want it done equitably.

[fol. 1591] A. Yes, but I don't want to say and ask the Commission to hold gas on the gas cap and produce the oil bearing zone.

Q. What is your definition of correlative rights?

A. I imagine that all will be the rights of everybody concerned, but that word is a little bit beyond me, but I take it that is it.

Chairman Bond: The Commission will recess until 10:00 o'clock in the morning.

[fol. 1592] Tom Palmer, called as a witness, being first duly sworn, testified as follows:

Direct examination.

By Mr. Adams:

Q. You are Tom Palmer, President of the Palmer Oil Corporation?

A. I am.

Q. Mr. Palmer, your company owns certain rights and properties known as the Palmer-Sterba lease, in the area under discussion here?

A. Yes.

Q. Which tract is under and by a contract with Gulf Oil Corporation and an instrument of assignment which has been referred to and offered in evidence as Exhibit 35?

A. Yes.

Q. There has been some discussion as to the construction placed by your company upon the terms of the assignment and contract under which the assignment was made to you by the Gulf Oil Corporation,—I'll ask you whether or not a conversation was had by you and any representative of the Gulf Oil Corporation and if so, about when and where?

A. Yes, before we completed the No. 4 Sterba, I think it was '43,—I believe it was '43.——

Q. In any event it was while that well was being drilled?

A. Yes, we talked before it was completed,—I went to [fol. 1593] Tulsa and talked to Mr. Greenslade——

Q. Who is Mr. Greenslade?

A. I think he was the man in charge of operations for the Gulf——

Judge Lowe: I believe we shall object to this, I assume it will be an attempt to vary the terms of a written instrument.

Chairman Bond: Well, if it is the same.

Q. Mr. Palmer there was some discussion to the effect that you, on behalf of the Palmer Oil Corporation, had never claimed the rights to any Medrano oil below a depth of 6000 feet,—such testimony has been offered in this case, that in conversation supposed to have been had in Tulsa, Oklahoma you made that statement,—I'll ask you to state whether or not that is correct?

Judge Lowe: Objected to as incompetent, irrelevant and immaterial, and contrary to the response filed by the Palmer Oil Company in this case.

Mr. Adams: If the Commission please, Mr. Kaveler testified to that fact.

Chairman Bond: If Mr. Kaveler testified to that, you may examine the witness on any point relating to it but you will have to show that Mr. Kaveler testified to it.

[fol. 1594] Mr. Adams: I have a transcript prepared by the Court Reporter, your Honor, I will read it to the Court. (Reading.)

"Q. Referring back to the Palmer-Sterba lease and the computation which you and your operators committee made, dividing between the Palmer Oil Corporation and Gulf Oil Corporation the participating factor which under your Plan you allowed to the Sterba lease,—correct me if I am in error,—did you make that computation based on that portion of the oil bearing sand located above or below respectively to the two companies, the 6000 feet level from the surface of the earth, is that right?

A. Yes sir.

Q. Or was that made in accordance with the geological report that went to the operators committee?

A. It was made by drawing a line 6000 feet below the surface of the earth on the basis of the statement of Mr. Tom Palmer, himself, and he appeared in Tulsa and made no claim on anything below 6000 feet below the earth and he asked that—— . . ."

Mr. Adams: That's where the answer breaks off,—that is Mr. Kaveler's testimony.

[fol. 1595] Chairman Bond: If Mr. Kaveler testified that

Mr. Palmer appeared in Tulsa and made that statement, the witness may answer.

A. I made the statement at the time that I wasn't interested in the Medrano sand where the top of the Medrano was below 6000 feet.

Judge Lowe: We object to that,—let me read the response of the Palmer Oil Company. Omitting the caption and reading (reading) "that this respondent and protestant *to the* corporation regularly organized and existing under and by virtue of the laws of the State of Kansas and is duly authorized to transact and carry business in the State of Oklahoma.

2nd. That it is the owner of the 7/8 working interest in and to the oil and gas lease on and covering the Southwest quarter of Section 35, Township 6, North, Range 10, West, situated in Caddo County, Oklahoma, with respect to all horizons to a depth of 6000 feet subject to an overriding royalty of 1/8 of the 7/8 working interest oil and gas in favor of Gulf Oil Corporation; that on said oil and gas lease respondent and protestant has drilled three test wells to a depth sufficient that the test of the Medrano sand formation [fol. 1596] and two of said wells have been completed as produc- oil or gas wells from the Medrano sand formation and have at all times since completion and are now being operated by the Palmer Oil Corporation.

3rd: That the Medrano sand formation has not from present exploration of said oil and gas lease been shown in any instance to be located or productive at a depth below 6000 feet; that all of oil and gas that is heretofore or now being produced from said Medrano sand in and under said lease has been and is being produced from said formation at a depth less than 6000 feet.",—they are not claiming before this Commission anything below a depth of 6000 feet.

Chairman Bond: The Commission will take it into consideration and if there is some dispute between Mr. Kaveler and Mr. Palmer,—whether that is material or not, if it has crept into the record, the Commission will hear this dispute between the parties, but the Commission can't understand how any of that can creep into the records without objection.

Mr. Adams: We made an objection, Your Honor,

Chairman Bond: And the Commission overruled you?

Mr. Adams: The record doesn't show any ruling. Your [fol. 1597] Honor.

Mr. Williams: It was elicited in cross examination.

Chairman Bond: You may proceed, gentlemen.—the Commission is going to ascertain what the dispute was between these parties.

Q. Will you proceed with the conversation you had with Mr. Greenslade, Mr. Palmer?

Judge Lowe: The same objections, if the Commission please.

Chairman Bond: Overruled.

Judge Lowe: Exception.

A. As I stated, I went to Tulsa at the time this Palmer-Sterba No. 4 was being completed,—I went to Mr. Greenslade's office, talked to him in his office,—and I said to him,—"What would happen in the event we drill another well to the Medrano above 6000 feet", and he says, "Tom, I don't know, but I'll see and let you know". I said, "If I get the Medrano above 600- feet, it's my well" and he said, "I'll let you know", but he never has. That's the only thing ever said between Mr. Greenslade and myself.

The witness excused.

[fol. 1598] Tom Gann, called as a witness, being first duly sworn, testified as follows:

Direct examination.

By Reford Bond, Jr.:

Q. State your name?
A. Tom Gann.
Q. Where do you live?
A. Chickasha, Oklahoma.
Q. What is your business?
A. I am engaged in farming and I trade in oil.
Q. And you are associated with the Bob White Oil Company?
A. Yes.

Q. In what capacity are you connected with that company?

A. I am a Director.

Q. I'll ask you to state whether you have been authorized by the President of that Company to appear here in behalf of the Bob White Oil Company?

A. Yes, I have.

Q. What lease is your Company interested in, in this Unitization matter, Mr. Gann?

A. The Stephens-Walker lease, located in the Southeast of the Northeast of Section 1.

Q. Southeast of the Northeast of Section 1?

A. Yes.

Q. What interest does your company have in that lease?

[fol. 1599] A. It has 1/16 overriding 7/8.

Q. Is that interest to your company free and clear of all costs of production?

A. It is.

Q. Will you state to this Commission what your objection is to the Unitization, so far as the interests of your company is concerned?

A. Well, as I understand under Unitization they would have a prior right and that would wipe us out,—we have an overriding interest, without any expense, and I understand Unitization would wipe that out.

Witness Excused.

[fol. 1600] Mrs. A. W. Flitt, called as a witness, being first duly sworn, testified as follows:

Examination.

By Reford Bond, Jr.:

Q. State your name?

A. Mrs. A. W. Flitt.

Q. Where do you live?

A. Thre- miles North of Verden, in Caddo County.

Q. In what county?

A. Caddo County.

Q. Mrs. Flitt, I believe you own part of the royalty interest under the Phillips-Margaret lease?

A. I do.

Q. That lease is located in Section 2, is it not?

A. That's correct.

Q. And is thought to be included in this Unitization?

A. Yes.

Q. Now, Mrs. Flitt, are you one of the objectors to this Plan?

A. Yes.

Q. Do you wish to state to the Commission what your objections are?

A. Yes, I do.

Q. Go ahead.

A. Well, one main objection, we believe this is our prop- [fol. 1601] erty to do with as we see fit. For years to come. And under Unitization that privilege is denied us, not for a year or two years but for eternity and I think that is a great injustice to anybody who owns property, under our Constitution. That's one of them,—can I say more than one?

Q. Yes.

A. Well, there are several others,—Phillips-Margaret has 130 acres of valuable land and there should be more wells put on that land. Mr. Williams, when I interviewed him in the winter for more wells said that, "We are not realizing on our equity in the land and I think that is a grave grievance because we are entitled to one eighth of every barrel of oil brought to the surface on that lease",—I think that's a grave grievance. Another reason the Phillips Petroleum Company has had that lease for four years,—for forty acres and they never have protected our interest. The Gulf has a lease that has expired on 80 acres and they haven't drilled enough wells on it, and another reason, up until now we have been successful in leasing that land but under Unitization that would be denied and that's a grievance to anybody.

Q. The Gulf has never put any well on the Holland lease?

A. No, they have allowed Amerada to drill two and drain our land for two years. They have never showed any inten-

tion of drilling and in fact they have ignored any plea I have made to them.

[fol. 1602] Q. Under the terms of your lease with them, when does it expire?

A. Just about a year, I think.

Q. And there are no wells on that land, whatsoever.

A. None soever.

Q. And the Phillips-Margaret 80 there is only one well?

A. There is only one well on the Margaret to the Medrano sand, yes.

Q. And there is a location on the Northwest corner of the lease which is being drained by the well to the Northwest of it?

A. That's right, by the Oaks well.

Q. And there's only one well on that 80 acre tract?

A. That's all, and Mr. Commissioner, please, I have another grievance,—there are many sands in the Medrano field. Up until a few years ago we had never heard of the Medrano sand, but it was discovered and we happened to have a very fine well in the Medrano sand. There's no possibility that any other company is going to explore that sand under our property and we believe that is a very prolific sand, or sands, and the Unitization will never——

Q. You object to the Gulf-Holland lease being included in this Unit?

A. I do, sir.

Q. Is there anything else, Mrs. Flitt, that you care to say [fol. 1603] to the Commission?

A. Well, there are quite a few things on that order, I don't think one well should be allowed to hold 160 acres and they have my lease and the can't anybody say anything about it,—we have no assurance that these gentlemen intend to do anything about it.

Q. Under your present contract, Mrs. Flitt, you have the right under the law to enforce drilling and marketing of your oil?

A. Yes, and I understand under Unitization further contracts are void.

Q. Now, you object to Unitization because you have no right to force these companies to do anything?

A. I have no right, our property is taken from us and we are at their mercy.

Q. Were you consulted about this Unitization matter before this Plan was put up?

A. No sir, we never knew anything about this,—this was a law on the books at the Capitol about 1945 and the first I knew of it was this.

Q. Now, you have made all the objections that have been made by you, with the advice of your engineer?

A. Yes.

Q. Is there any other point you want to tell the Commission?

A. Well, it is a fact that the people who have these leases [fol. 1604] aren't without any right in their property.

[fol. 1605] (Mrs. Flitt is on the stand, being examined by Reford Bond., Jr.)

Q. Now, Mrs. Flitt, do you know when I talk of "field" what that means in oil and gas in the term of common parlance?

A. It means accepted fact, common fact, and it's always been accepted since the discovery of oil and will be referred to as the oil companies as Cement field and we are West Cement field.

Q. What does the word "field" used in connection with oil and gas in terms of common parlance mean?

A. That is a field of a number of acres underlaid with numerous oil and gas sands.

Mr. Williams Examines the Witness:

Q. Your interest in the West Cement Field is under the two leases, one designated as Phillips-Margaret and the other as the Gulf Holland lease.

A. That is correct.

Q. And these two are the only two in the field?

A. That is all under the Medrano sand, I have other interests.

Q. That is all.

[fol. 1606] Mr. L. A. Davis is recalled to the stand.

Witness examined.

By Reford Bond, Jr.:

Q. You are the same L. A. Davis who has been on the stand before?

A. I am.

Q. And you are conducting the defense in this application in chief for the royalty owners?

A. Yes, I am.

Q. Do you have with you the maps of the Cement field that were filed by Mr. Clapp?

A. Yes.

Q. I hand you what has been marked as Exhibit 113 and ask you to put that on the blackboard, please, Mr. Davis, so the Commission can see it.

(Witness puts exhibit 113 on blackboard.)

Now, tell the Commission what that is.

A. It is a map of the Cement field up here (indicating).

Mr. Williams: Did you have anything to do with the drawing of the map?

A. I did not.

Reford Bond, Jr., Continues with the Witness:

Q. By whom was the map drawn?

A. The map was drawn by Frederick G. Clapp.

[fol. 1607] Q. You know him?

A. Yes, and I took him over the field in my car.

Q. That was his personal possession at one time in his lifetime?

A. Yes, sir.

Q. And you — that map was compiled by and is the work of the late Mr. Fred G. Clapp?

A. Yes, he told me that it was his and I know that it was.

Mr. Williams: We object for hears-y.

Commissioner Jones: Sustained.

Mr. Adams Continues with the Witness:

Q. Do you know whether or not that map or copy thereof was in general circulation in the vicinity of the field that is here under discussion?

A. There were many copies in circulation.

Q. About when?

A. 1940.

Mr. Williams: That still doesn't say it's accurate, just because that a man made a map and another layman here that knows the man and says thus and so, that it should be proper evidence, a man or someone who is an engineer and not a layman that knows, should identify the map.

Reford Bond, Jr.: The ruling is excepted to.

Commissioner Jones: Exception allowed.

[fol. 1608] Reford Bond, Jr., Continues with the Witness:

Q. The royalty owners offer a tender in evidence, a map marked Exhibit 113, and further state that if the witness was permitted to testify that he would testify that he received the map from Mr. Clapp's office and that his partner in Chickasha, Oklahoma, Mr. John Graham gave it to him and was represented by Mr. Clapp to him as having been prepared by him and was given to him for the purpose of showing Mr. Clapp's geological research work in the area of the Cement field and Chickasha gas field, that the purpose of the map is to show that the use of the term "field" was used by geologists in mapping their work and geological work and particularly in the area in which is located the Cement oil field and Chickasha gas field inasmuch as the Clapp map defines the area which is underlaid by the West Medrano sand and numerous other sands in the Cement area and Cement oil field and which designates the area which is underlaid by numerous gas sands and in the area of the Chickasha gas field, is the Chickasha gas field.

Mr. Williams: We would like to renew our objection to the offer.

Reford Bond, Jr.: And we tender the evidence.

Mr. Williams: We say that it's not competent, relevant or material.

Commissioner Jones: We will admit the exhibit for what it's worth, but he should not be allowed to testify unless he [fol. 1609] had something to do with it.

Reford Bond, Jr.: Then the tender is accepted by the Commission,

Mr. Williams: Exceptions.

Commissioner Jones: Exceptions allowed.

Reford Bond, Jr., Continues with the Witness:

Q. Now, Mr. Davis, I hand you what has been marked by the Reporter as Exhibit 114 and ask you to state what that is.

A. It is a geological report of the Cement oil field by F. G. Clapp, dated May 1, 1919, giving information of the Cement field.

Mr. Williams: We would like to make the same objection, Mr. Clapp is not here for cross-examination.

Reford Bond, Jr., Continues with the Witness:

Q. Mr. Clapp is now deceased?

A. Yes.

Q. Did you know him in his lifetime and of his national reputation?

A. Yes, and signature.

Q. Will you state what that is? (indicating to Exhibit 114)

A. It is the geological report.

Q. Will you state what his national reputation was?

A. He first become prominent in the Tea Pot Dome deal for the Government, he was an engineer and an instructor [fol. 1610] and lecturor and became well known and an authority on geology.

Mr. Williams: We still object.

Chairman Bond: Same ruling.

Reford Bond, Jr., Continues with the Witness:

Q. I call your attention to that part of the report which the term "field" in connection with oil and gas and I will

ask you to read that portion of the report to the Commission.

Mr. Williams: The ruling was to introduce it for what it's worth, but not qualify to testify.

Chairman Bond: That is right.

A. "Geological Report of the Cement Field, by F. G. Clapp, Oklahoma City, Oklahoma, May 1, 1919.

In reply to your verbal inquiry as to the desirability of deeper drilling (below the level of the 2200-2400 feet groups of sands) I would like to state first that I am an earnest advocate of deep drilling in this field. I have already recommended formally to the companies in which I am financially interested, and informally to the others which are operating in the field, that they continue all wells to greater depths unless they be paying producers in the known sands and have further recommended that all new wells be started with suitable equipment and size of casing to drill to 4000 feet, if necessary.

Now, I am sure you will like to know why I am confident [fol. 1611] the field with a big producer from deeper sands than those now known and you may be interested to know that this probability appears geologically to be almost a certainty, or at least as nearly so as can be in the present stage of development.

In the first place, therefore, I must explain that all the sands thus far tapped in the Cement field are in the series of rock strata technically known as the Permian or red beds, those formations being 2700 feet and certainly 1700 feet in thickness. Judging by geological correlations between the Cement field and certain Texas fields where identical fossils are found, the Permian in the Cement field may be as much as 3000 feet from the surface. *This fact is very important to a correct understanding* of the existence of deeper productive sands, because the Permian is a geological series in which oil is not known to have been originally in nature, all the oil in the Permian having come up from deeper strata. Now, since productive oil and gas wells have been found in the Cement fields in the Permian, we know that the oil and gas in them comes from below. Since the volumes in the 2200-2400 group of sands are considerable,

something much better may be expected below. Such being the case, all wells should be started so as to drill to the extreme depths, if necessary.'

Now, you will ask what is the extreme depth? All geologists will answer that nobody knows with certainty as [fol. 1612] the underlying groups of sands have not been penetrated within fifty miles of Cement. We, however, make a certain production based on the developments in the Healdton, Fox, Duncan and Burkburnett fields and correlation of well logs with those in the Cement field. Judging by such comparisons, my opinion is that the first big sand or group of sands in the Cement field will be somewhat about 3400 feet from the surface, or within a few hundred feet of that depth. It will probably not be necessary to go 4000 feet. There may continue to be productive sands to that depth and deeper, and it is well to prepare for all contingencies.

I should say, also, that the formation underlying the Permian, or red beds, is the Pennsylvanian in which the greater part of the production of Northern Oklahoma, Kansas and the extreme north Texas field is found. Therefore, there is every probability that the same formation will be immensely productive in the Cement field which has such good geological structure and abundant showings near the surface—not to mention the 2200-2400 feet sands which will make paying producers throughout a substantial part of the field.

My idea is that wells in the Cement field should be drilled with the combination outfit, using the Rotary type of tools to a depth of say 2200 feet, then shifting to standard cable tools. Any sand might be lost by drilling into it with Rotary tools.

[fol. 1613] Trusting this answers your inquiries, I am, Yours very truly, (Signed) F. G. Clapp."

Q. We offer Exhibit 114 for the purpose of showing the meaning of the word "field" as used in connection with oil and gas.

Chairman Bond: Same ruling.

Mr. Williams: Exception.

Reford Bond, Jr., continues with the Witness:

Q. Mr. Davis, I hand you a photostatic copy of a map and ask you to state where you got that.

A. I procured it from John S. Graham who is a partner of Dr. Frederick G. Clapp at Chickasha and taken from Dr. Clapp's files.

Q. Read the title of the map.

A. "Map of the Cement Field."

Q. We offer the map as exhibit 115 for the purpose of showing the meaning of the word "field".

Chairman Bond: Same ruling.

Mr. Williams: Same objection.

Chairman Bond: Exception allowed.

Reford Bond, Jr. continues with the Witness:

Q. Now, Mr. Davis, are the owners of various royalty interest under leases covering lands within the area underlaid by the Medrano sand?

A. Yes.

[fol. 1614] Q. What leases do you own royalty under?

A. Tract No. 54, known as the Potter lease, Tract 55 known as the Ruxtell lease, and my wife and I have it jointly, some under the L. L. Edwards tract, 44, Section 25-6-10 and Tract 45 known as Niles farm in northwest quarter of Section 36, Township 6, North Range, 10 West, Caddo County, Oklahoma.

Q. Do you have any other royalty interest in the interest in the area underlaid by the Medrano sand, Mr. Davis, or have you enumerated them all?

A. I think that is all.

Q. All of these leases are producers of gas, are they in the Medrano sand?

A. Well, the Potter lease has a well on it, it hasn't been classified, the Niles one has a well classified in the Medrano sand and L. L. Edwards in 44 has an oil well, but is not Medrano sand, but has an offset of Medrano sand and Kistler sand.

Q. Has any compensation been offered you by the plan for use of gas in the production of oil?

A. No, they have not indicated that I might receive any more than a small pittance from the oil from someone else's tract.

Q. That is figured on the value of the gas that is estimated to be under your tract at 5 cents per cubic foot.

A. That is what I understood.

[fol. 1615] Q. And the other factors in working out the equities was done by the plan, as done by the plan?

A. Yes.

Q. As I understand your testimony no compensation was allowed you in the plan for use of gas or producing the oil for recycling and replacing the oil?

A. No, none at all.

Q. Now the L. L. Edwards well, which lease is that you have interest under?

A. The Magnolia west half of SW of 4-25, 6N, 10W, Tract 44, they attempted to take 10 acres out of the 80.

Q. Now, has any well been drilled to the Medrano sand on that lease?

A. No.

Q. And about how much of the 80 acre lease was attempted to be included in the Medrano sand area by the applicant's plan?

A. They zigzagged the corner of the 10 acres.

Q. Can you see by Exhibit 24 how much of the 10 acres supposing to be underlaid by the Medrano sand according to their contention,

A. I believe their geologist contend 2½ acres, two to 2½ acres.

Q. You can see that by looking at Exhibit 24?

A. Yes.

Q. Now, that lease is right up at the top of the structure [fol. 1616] where the applicant's geologist says that the gas sand pinches out.

A. That is what the reports say on it.

Q. Will you state to the Commission that you do not want this lease included in the pool in the unit plan?

A. All the income from this would be so small that it would not compensate having it and it might perpetuate the lease or prevent the sale of the lease or getting other wells drilled on it, if it is perpetuated.

Q. I understand you to say that the applicants say that it's so small that it doesn't mean anything to you?

A. That is right.

Q. And you heard the testimony here of Mr. Kaveler when he said that various objections that were made were diminished.

A. I remember his using that word.

Q. Do you know what deminimus means?

A. No, I don't believe I do.

Q. Mr. Kaveler said it means that it's so small it means nothing.

A. Deminimus, means nothing?

Q. I will ask you if you think that this matter of this fact is deminumus, if that is the meaning of the word.

A. It would be diminmus from our standpoint, but from the proponents it might be that they could save drilling a well.

[fol. 1617] Q. The amount of the gas?

A. It would not equal $1.00 per acre rental, that is, 100 to 150 dollar bonus an acre that we could get now if we had the lease.

Q. Is there any statement that you would like to make to the Commission at this time?

A. I think so, Mr. Holland has spoken of them, I would like to say this, the other day when we heard the argument in eliminating the tracts, my good friend, Judge Brown, to prevent drilling a nuisance well and otherwise he thought that you would drain all the gas from under the pool, what we should be entitled to, otherwise he takes the position of the "Dog in the Manger," he won't let the cow eat hay and he won't let anyone else eat it, that's the way with the little tract, they won't drill it and don't want you to drill it.

Q. As far as you are concerned they can have the gas under that little piece of land and you are not interested.

Mr. Williams: We object to that.

Chairman Bond: Sustained.

Mr. Williams: We have no objection at all to his land owners and royalty owners coming before the Commission and stating their position, the nature of this hearing is an invitation, it is a form where these things should be phrased [fol. 1618] at and this man is the moving light, and the ram-

rod of this and when he comes to the stand and enters into this argument, we think that it is beyond his realm of his position and think that it should be left to his attorney to do that.

Chairman Bond: The Commission sustains the objection on grounds that it's leading.

Reford Bond, Jr. continues with the Witness:

Q. If the Commission please, the royalty owners would not have been so bold to introduce evidence of this kind before the Commission if it hadn't been for the fact that the proponents introduced numerous letters at the beginning for what they were worth, and stated their position and instead of doing that by letter, we are bringing them here and letting them state their position orally.

Chairman Bond: The Commission sustained it because it's leading.

Reford Bond, Jr. continues with the Witness:

Q. State to the Commission whether or not you desire to recover the gas under this little piece of land in the Edwards lease if there is any gas under it which I understand the engineer does not admit.

A. The only thing that we want, I think that we asked for all royalty owners under their tracts be treated fair, but [fol. 1619] anyway for myself, we would like to have a well drilled there ourselves, whether it's Kistler or Medrano sand, it's offset by wells claiming to be both.

[fol. 1620] Q. You are willing to rest on your engineer's testimony to the Commission?

A. Yes.

Q. Is there anything else you would like to state to the Commission, Mr. Davis?

A. Well, I think there are several things that are unfair and are not feasible,—I think anything that is not right, not feasible,—I think when people do these things there is a law or decision that will reach them. I think that will happen to this case,—I think that there is discrimination between the royalty owners and the lease owners and I think they have no right to the oil under these leases, at all.

I think we are not being fairly treated,—we may have to go to the Supreme Court to find out what our contract provides, but I think we must protect our rights. We have a contract with Mr. Potter to protest this well here (indicating on plat) but if it is Unitized I don't know what can be done,—we have a contract with Mr. Rookstool, on this well (indicating on plat) and the Magnolia has a contract on this well (indicating on plat.)

Q. You think if they Unitize the Medrano sand they will Unitize the rest of the sands too?

A. I think that is the next move and I think there — a few other things. I didn't receive any notice until this application was filed and I never did receive any personal [fol. 1621] notice from them until after the meeting at the Chamber of Commerce at Chickasha, and there then they asked me to come over. We had a meeting down there and the proponents come to the meeting,—Mr. Rookstool made us a speech in which he told the royalty owners that,—he told them it was unfair to the royalty owners, and it was socialistic and communistic and unfair,—that the Unit Plan was unfair,—they told us this Plan would make us so much more money that we ought to join.

Mr. Williams: We move to strike out the argument as incompetent, irrelevant and immaterial and untrue.

Chairman Bond: The Commission will strike out the hearsay testimony.

A. (continued) we were told that under the Plan of Unitization that we might have, would mean consolidation of contracts of the royalty owners like they had in Cotton Valley, down in Louisiana. I think this is unfair,—in the Cotton Valley Unitization those people consulted the royalty owners before they Unitized, they had voluntary Unitization. If they had done that in this case, but they have not tried to sell it to the royalty owners, they have tried to cram it down their throats. I don't think it is right, fair or feasible or practical. I don't think it is right to attempt to do without the consent of the land owners and royalty owners, the owners of the oil in place. I think I can speak the opinion of more than 300 royalty owners, Grady

[fol. 1622] and Caddo Counties and say that we do not want the Unitization.

Q. Do you have anything more to say, Mr. Davis?

A. Yes, I believe that before the Medrano sand was discovered we had more than 200 wells in that field, and in 1936 we had. In 1936 we had to file suit or a suit was filed to compel the drilling of the Magnolia well on the Medrano farm. Corey and Bearden had this well and Ray Stephens took it over and completed—Magnolia had it and turned it back,—Mr. M. E. Blake had it and wouldn't pay the rental and turned it back and as a result we have the Medrano sand well, otherwise we wouldn't have had the Medrano sand.

Examination.

By Mr. Williams:

Q. What well in the gas cap was that, to which you refer?

A. The Medrano No. 6.

Q. That was the discovery well in the Medrano field?

A. Yes.

Q. When was that well drilled?

A. It was completed in October or November 1936. I have a log of it here,—August 22, 1936,—it was completed October 15, 1936.

Q. What interest did you have in that well?

A. At that time I had 11-5/6 acres of the royalty,—I have sold it since.

[fol. 1623] Q. Did you have any other interest in the well at that time?

A. I did not at that time.

Q. Your other interests are what?

A. The Northwest of 36.

Q. That is tract No. 45?

A. That's tract No. 45.

Q. What is your interest in that tract?

A. My interest is, and my wife's, 10 acres and my brother and sister,—we have 30 acres out of 160.

Q. That would be 30/160ths?

A. Yes.

Q. What other interest do you have?

A. 9-3/4 interest in the L. L. Edwards, in Tract 44.

Q. What is the total acreage in that?

A. 80 acres of which there is 10 acres in the pool.

Q. You have many acres?

A. 9-1/3.

Q. And you have tract 54 and 55?

A. Yes, I have the royalty to the mineral interest to 54, and all the mineral interest and 1/4 of the oil royalty interest in 55. I sold 3/4 of 1/8 of the oil produced.

Q. But from the oil produced from the Medrano sand you would receive 1/4?

A. Yes.

Q. Do you have any other interest in the West Cement [fol. 1624] Medrano field?

A. No, I believe that's all.

Q. Mr. Davis, how much are you receiving from these interests at the present time?

A. Well, we have a good gas well at present on tract 54.

Q. That was completed about a year ago?

A. Yes.

Q. How much income do you receive or have you received during that time?

A. Not anything from that.

Q. How much income do you receive from tract No. 55?

A. Not anything.

Q. What Medrano income do you receive from tract 44, which I believe is the Edwards tract?

A. Not anything.

Q. And what have you received from tract 45, the Niles tract?

A. Not much, I don't know.

Q. Have you calculated what your income would be under the Unit program?

A. Yes, I did down here in 54 and 55 under that gas well, the Potter gas well, when it was,—I would get 44¢ a day.

Q. Do you know, as a matter of fact, that if this Unitization is approved, you will received $68. and some cents a month?

A. No sir, I don't know, I haven't figured that up.

[fol. 1625] Q. The evidence shows your income would be $68.75?

A. Well, we wouldn't be,—we wouldn't see much of it because if it does produce it will be taken by somebody else.

Q. You are just "agin" it?

A. Well, we are not so much against Unitization, but we are against compulsion.

Q. You are president of the Caddo County organization of royalty owners, are you?

A. Yes.

Q. You are organized,—you organized them,—when did you organize them?

A. I believe it was November 1st.

Q. For what purpose?

A. For the purpose of considering this Unitization Plan, whether we wanted it or not.

Q. Yet, you didn't receive any notice of this Unitization?

A. No.

Q. You just looked into your crystal ball and saw it was coming up.

Mr. Reford Bond Jr.: We object to the crystal ball question.

A. May I speak to the Commission on that point,—may I tell just how we heard it,—about it when it first started?

Chairman Bond: You may.

A. I was at Anadarko and Senator Pruet asked me how [fol. 1626] was the matter coming along with the Unitization over there. I said, "how is that", he says, "the plan for unitization for West Cement, how is it coming along," and I said, "what was that" and he says, "the new law passed by the legislature,—I voted for the crazy thing but I don't like it" and he told me what it was and I said I don't think the folks will agree to it,—I went to Judge Sanders' office, he is Justice of the Peace, and got a map,—a copy of the Session Laws and read it. I didn't know anything about the procedure in hearings before the Corporation Commission. We called a meeting and we discussed it and talked it over and asked them how many of them had ever heard of that law——

Q. Well, you were against it before you read any of the details of the Plan, weren't you?

A. Well, we read the law and the law said that a well drilled anywhere on a tract,—read the substance of the law and that was enough to satisfy us.

Q. Mr. Davis, how much did you collect from your organization for that work?

Mr. Reford Bond Jr.: We'll object to that.

A. I'd like to answer that question, to say that I have received no compensation, I never received any compensation along the line but I spent a dollar ever time anybody else did.

Q. Who collected that money?

[fol. 1627] A. Most of it was paid to me.

Q. You paid your own dollar to yourself?

A. No.

Q. Who did you pay it to?

A. I paid it to the pool.

Examination by Reford Bond Jr.:

Q. You operate under a Board of Directors, do you?

A. Yes.

Q. How many directors do you have?

A. 12.

Q. You operate under a Board of Directors?

A. Yes.

Q. Now, is there anything else you want to state to the Commission?

A. That's all I think of at the present time,—there are a lot of things I would like to say but I know it is taking time up from the Commissioners.

Examination by Mr. Adams:

Q. Mr. Davis, Mr. Williams, in his cross-examination of you, asked you what interest you owned in the several tracts, and in his questions each time he would say, "West Cement Medrano Field" or in the "Medrano Field",—I wondered if you understood that?

[fol. 1628] A. I don't understand the meaning of the word, "field",—there is no such thing as the Medrano field over there. It is the Medrano zone of the West Cement Field. It was drilled within the confines of the 200 wells

that had existed before the Medrano pool or Medrano sand was discovered.

Q. It was known as the West Cement Field?

A. It was known as the West Cement Field.

Q. So, when you answered those questions you had reference to the Medrano zone and,——

A. Yes.

Examination by Mr. Williams:

Q. Mr. Davis, before you were coached by my good friend, Mr. Adams, you——

Mr. Adams: We object to the form——

Q. Well, I asked you the question with reference to the West Cement Medrano Field, you understood what I meant, didn't you?

A. That wasn't the terminology of it, but I thought you meant the West Cement Field in which the Medrano sand was located.

Q. But when I used the terminology, West Cement Medrano Field, you had no difficulty in pointing out on the map what I was talking about, did you?

A. I pointed it out in the West Cement Field. There is [fols. 1629-1630] no such thing as the West Cement Medrano Field.

[fol. 1631] Chairman Bond: Gentlemen, are you ready to proceed?

Reford Bond, Jr.: The next information and testimony that we wish to offer is on the Tom Potter lease on Tract 54 and the production of the testimony is to show the sand from which the well is producing, we expect the testimony to show that it's almost impossible to show what this well is completed in. It's now not producing and never has produced. I expect Mr. Potter to ask the Commission for a temporary order so if there is any change or available information that this well is now in the Medrano sand, the Commission can get him released.

Chairman Bond: Is there any controversy as to the sand that this well is in?

Reford Bond, Jr.: Yes, there is.

[fol. 1632] . Whereupon, B. T. MURPHREE, is recalled to the stand.

Witness examined by Reford Bond, Jr.:

Q. You are B. T. Murphree that testified heretofore and you are an engineer?

A. Yes.

Q. I call your attention to Tract No. 54 in petition of the exhibit and to the gas well located thereon designated as the Potter-Davis well, and ask you to state if you have made an examination of data in connection with this well?

A. I went out to the Potter Davis well and took the samples that they had conducted in drilling the well and took those samples and looked at them to ascertain the type of the Medrano or type of sands that will appear in the well. As far as the samples are concerned,——

Q. Mr. Murphree, if you will confine the answer to things that you did and data that you examined, please.

A. I took these samples and looked at them and did a log on them, on the well, I should say, then I obtained electric logs around the well and compare those and I prepared a cross section which I have here (indicating) through the Amerada Hartshorn to Amerada Hartshorn 1, Amerada Edwards 1, Magnolia-Edwards 6, Magnolia-Edwards 1, Potter-Davis No. 1.

Q. Mr. Murphree, you examined samples of the electric logs, did you? You examined the actual cores?

[fol. 1633] A. I obtained the cores which were taken from the wells and I still have them in my possession.

Q. Did you examine any other physical data from these wells?

A. The only other thing that I could mention is the casing and tubing pressure on the well.

Q. Then, of course, you examined the data on other wells surrounding the other?

A. Yes.

Q. You prepared a chart to various wells in this area in connection with your studies?

A. I did.

Q. That is marked as Exhibit 116 and will you please place that map on the board so the Commission can see it.

A. Yes. (Witness places Exhibit 116 on blackboard.)

Q. Now then, Mr. Murphree, will you explain that part to the Commission?

A. It is a cross section shown on a little map where it extends from and to across the south end of the Medrano sand from east to west, taking the electric log on Amerada Hartshorn No. 2, Hartshorn No. 1, Amerada Edwards No. 1, Magnolia Edwards No. 6, Magnolia Edwards No. 7 and Potter Davis which is located here on the small map. (Indicating). It is normally, the electric logs, placed at the same sub-sea level as to correlate them and see what [fol. 1634] sands would correlate with each other or would not correlate with each other, this little kick on both sides will indicate the cross section.

Q. Those are the kicks that lie along the top black line across the exhibit?

A. Yes.

Q. Will you mark that line A?

A. I will mark it A-A*. This lower line which I will mark B-B* shows what is proposed to be the Medrano sand in these lower wells. (indicating) These three here. It can be picked out very easily. This well here (indicating) had practically no Medrano or it didn't show on the electric log.

Mark Adams: What well is that?

A. Magnolia Edwards No. 6. They are all very questionable to me whether they included any Medrano sand at all, it's very thin or tight if it were present.

Mark Adams: What were the names of the three wells?

A. Magnolia-Edwards 6, Edwards No. 1 and Potter-Davis No. 1.

Reford Bond, Jr. continues with the witness:

Q. Now, will you state to the Commission whether or not in your opinion it can be determined with any degree of certainty from the data that is available from what sand or in which sand the Potter Davis well is completed.

[fol. 1635] A. It is the best information we have on whether it is in the Medrano or not and from this information I could not say whether it is or not.

Q. Will you point out to the Commission the things that will indicate that is in the Medrano sand?

A. Down here (indicating) on the three wells, Amerada-Hartshorn 2, Hartshorn 1 and Amerada-Edwards No. 1, we got 9 electric logs in the sand and porosity will indicate that there — oil in the sand (over here) in the Magnolia-Edwards No. 6, and Edwards No. 1 and Potter-Davis, we got very little reaction in the sand.

Q. Which indicates what?

A. Which makes the data very sketchy as to whether there is Medrano or not.

Q. Now, what other evidence have you examined which would indicate that the sand in which the Potter-Davis well completed is in the Medrano?

A. These cores which I obtained from the well ranged from 40 per cent up to 60 per cent, almost contending they are very hard and tight and the sand just doesn't look like the Medrano sand in the cores.

Q. Does the Medrano sand contain a little lime?

A. As I understand it, it's a fairly clean sand and does not contain too much lime.

Q. Is there any conglomerate on the sand in the cores? [fol. 1636] A. In the samples that we obtained from the well, I could find no conglomerate section from the Medrano sand.

Q. Does that indicate that it is in the Medrano sand.

A. There should be a conglomerate come in on top of the Medrano, or there has been in the field.

Q. State to the Commission whether or not in your opinion, if you are able to do so, if this Potter-Davis well was completed in the Medrano sand?

A. I couldn't definitely state whether it is or not, it's questionable if it is.

Q. How could it be definitely determined?

A. As to the definite determination of what it's production is, information from the well which is not available, I mean production information, boring of the well, observing pressures and that is all I know.

Q. At the present time, the well has not been produced?

A. No.

Q. Completed about when?

A. About one year ago.

Q. Would that be any assistance in determining the sand if that well was deepened, or another well to be drilled, deepened.

A. Yes, if you deepened the Potter-Davis well and determined the sections below the well, you could definitely correlate the Medrano and find out.

[fol. 1637] Q. Now would it not be practical engineering operation to deepen this well?

A. You have a 7 inch casing in that well and it could be that you could drill a 6 or 6¼ inch hole inside the casing.

Q. With such an operation, would it injure the Medrano sand in the horizon if the well were not completed in the Medrano sand?

A. No, it wouldn't injure the sand.

Q. It could be done?

A. Yes.

Mark Adams examines the witness:

Q. On your diagram on the board the third well from the left, did you say that that did not disclose any Medrano sand?

A. It doesn't have any Medrano sand, I believe.

Q. Which one is it that you said did not have?

A. This one (indicating), the Magnolia-Edwards No. 6.

Q. Isn't that a well, Magnolia-Edwards No. 7, wasn't that drilled immediately north of the well, about 200 feet to the Medrano sand?

A. That is right.

Q. And it recovered a complete section in the Medrano sand?

A. I believe it did.

Q. Which very definitely reflects that the No. 6 well was drilled in a fault, was it not?

[fols. 1638-1639] A. It seems that this section from here down (indicating) on the Edwards No. 1 contains up in comparison to these others and it fixes the irregular intervals again over here (indicating) so that must be a fault in there somewhere.

Q. And that well, to which we have just referred, is in the location of what has been marked on the map as Edwards fault?

A. Yes.

Q. That is all.

Mr. Williams: Will you kindly, across the board, identify these wells again?

A. We have the Amerada-Hartshorn No. 2, Hartshorn No. 1, Amerada-Edwards No. 1, Magnolia-Edwards No. 6 and Magnolia Edwards No. 7, and Potter-Davis.

Chairman Bond: The Commission will recess until 2:00 o'clock.

[fol. 1640] STIPULATION RE EXHIBITS

Chairman Bond: Gentlemen, you may proceed in C. D. 1308.

Reford Bond, Jr.: It is stipulated by the Petitioners and the royalty owners that the list of Royalty Owners marked Exhibit 117 be used by the parties in connection with this stipulation to show the interests of the royalty owners, and their per cent in the entire unit and that it is stipulated by the parties that the interest of the royalties is and the lands under which they own that interest are and that percentage of the total interest in the proposed pool is shown on Exhibit 117, would the exception of Harold Edwin Plummer, he has withdrawn as a protestant.

Mr. Williams: We can't stipulate that those are parties he represents because we do not know. We will stipulate that the interests set out by the names are the interests of parties who appear on this exhibit.

Reford Bond, Jr.: If the Commission please, I don't believe that there was anything in the stipulation that provided about whom we represented, in the event the Commission wants to know and I know that they wish to know, I will say that I represent every name and every person on that exhibit and have been so authorized by their signatures which I have in my files and which Mr. Davis has in his. [fol. 1641] If the Commission please, I take it that Counsel agrees to the stipulation that was dictated into the record, is that correct?

Mr. Williams: I will agree that the interest of several parties on Exhibit 117 or the interests shown on that exhibit is correct.

Reford Bond Jr.: That they own the interests as on the exhibit?

Mr. Williams: Yes.

Reford Bond, Jr.. And that those are per cent interests in the pool to be unitized, the area that you propose to unitize as appears on the exhibit opposite their respective names?

Mr. Williams: It is the one that we figured for you.

Reford Bond, Jr.: Yes, you made it out.

Mr. Williams: Taken from pipeline division orders.

Chairman Bond: Let the exhibit be received.

Reford Bond, Jr.: At this time we want to offer here J. W. Fletcher, the owner of the NW¼ of Sec. 34, Tnsh 6N, containing 160 acres subject to the oil and gas leases there-on and Eva Parker, the owner of an interest in the NW¼ of Sec. 35, Township 6N Range 10W and Frank Pohleman, the owner of tract No. 6 on the applicant's [fol. 1642] exhibit 24 which is the NW¼ of Section 33, Township 6N, Range 10W, in addition thereto to the list offered.

[fol. 1643] B. T. Murphree recalled to the stand.

Cross examination by Mr. Williams:

Q. Mr. Murphree, your conclusions in regard to the Potter-Davis well, as I understand it, are predicated upon your observance of the samples taken from the well, your observance from the cores and correlation of the electric logs as shown on Exhibit 116.

A. Yes, there were some other production.

Q. How many samples from wells in the West Cement Medrano field have you analyzed for study.

A. You mean how many wells have I logged in the field?

Q. Yes, that you have examined the samples on.

A. Five, I believe.

Q. And how many cores from other wells in the field have you had opportunity to observe?

A. Two other wells.

Q. Do you remember those wells?

A. They were Phillips wells, it's been quite awhile back, one on the Oaks lease, that was 2 or 3 or 4, there were that many cored.

Q. There were two other wells?

A. Yes.

Q. You spoke something about the pressure of the Potter-Davis well, you are appearing here on behalf of Mr. Potter, are you not?

[fol. 1644] A. Yes.

Q. Mr. Potter has information as to those pressures, does he not?

A. Yes.

Q. Do you know what they are?

A. Well, at the time I went down there and cored it, it had about 900 pounds at the well head.

Q. At the well head?

A. Yes.

Q. At the time you went down to observe it, can you fix approximately the time.

A. December of 1946.

Q. December, 1946?

A. Yes.

Q. Do you know how long the well had been completed and shut in at the time that you observed the pressures on the well?

A. About four and one-half months, now, as to being shut in all the time, they might have had it open into the air.

Q. It's not been connected?

A. No.

Q. Do you consider the well head pressure as observed by you either higher or lower than normal for the Medrano?

A. Well, the Medrano at that time was around 900, was near the Medrano pressure, or was at that time.

[fol. 1645] Q. Then in your testimony, you are not expressing a definite opinion one way or the other as to the sand at which it was completed but you are pointing out the fact that the information was sketchy and that there was a question about it.

A. Yes, there is a question in mind as to the sand it's completed in.

Q. That is all.

Witness excused.

Reford Bond, Jr.: We offer Exhibit No. 116.

Chairman Bond: Received.

Reford Bond, Jr.: Should the original be withdrawn and substitute a photostatic copy?

Chairman Bond: Permission granted.

Reford Bond, Jr.: That is all the evidence that we have at this time, if the Commission please, however, we understood that there will be some additional evidence offered in protest to this application and therefore we prefer not to rest our case at this time.

Mr. Page: I desire to offer evidence on behalf of our Clients, they will be here in a few moments, while we are waiting, I would like to recall Mr. Murphree.

[fol. 1646] Mr. Murphree recalled to the stand.

Mr. Page examines the witness:

Q. Are you the same Mr. Murphree who has testified heretofore on behalf of the royalty owners?

A. I am.

Q. I believe you have compiled certain figures that have been introduced in evidence concerning the amount of income to the various leases under present competitive operations and when it will be adopted here and put in force by the Commission.

A. Yes, as stated in there.

Q. Mr. Murphree, I direct your attention to what is known as the Plummer lease, which is divided into two separate tracts, No. 19, is Plummer with 80 and Tract No. 20 is known as Plummer east 80, will you please state to the Commission concerning the east 80 in the amount of decrease in income to the east 80 that will occur in event this plan is adopted and put in operation.

A. Tract No. 20, Plummer 4 and 5 under competitive operations, as it's going now, oil at $2.00 per barrel and gas at 15 cent per thousand, at present about $3,014 per month; under the unit plan they would receive about $2,678 per month.

Q. Now, I direct your attention please, sir, as to the Plummer west 80 and ask you to give the figures on that tract as you have done on the east 80.

[fol. 1647] A. Tract No. 19, the Plummer No. 3 would receive or is receiving about $1,489 to the 1/8 interest and the unit interest would receive about $1,596.

Q. That would be an increase of about how much per month?

A. $107.00.

Q. The West 80 is the one in the Medrano pool?

A. Yes.

Q. And the east 80 has two Medrano wells?

A. 4 and 5.

Q. The east 80 is decreased how much under the plan, approximately.

A. $340.00.

Q. And the west 80 is increased something over $100.00?

A. Yes.

Q. Now can you state to the Commission please, sir, from the exhibits that have been introduced what is known as the Plummer West 80 as included as to number of acres.

A. 50 acres.

Q. And how many acres of the east 80 are included?

A. 70 acres.

Q. 70?

A. Yes.

Q. Stephens Petroleum Company own both of the two [fol. 1648] 80's, all of the west 80 and a portion of the east 80.

A. According to this exhibit.

Mr. Adams: You mean they own the lease interest?

A. Yes, according to the exhibit.

Mr. Adams: And the reduction to royalty?

A. Royalty interests only.

Jack Page continues with the witness:

Q. Do you have the figures at your command as to the amount of income, working interest?

A. No, I have the amount of production figures on the lease here.

Q. That is all.

Mr. Williams examines the witness:

Q. These calculations were based on what months income?

A. April, 1947.

Q. That is prior to the present gas order in the pool?

A. Yes.

Q. Now then, at arriving at your unit income of the unit operation did you take into consideration the accelerated income in parts of the exhibit?

A. The interests that I used in arriving at the 1/8 interest in the unit plan or the ones set forth in the table, Exhibit D, Part 1?

Q. And you did not take into account accelerated interest?

[fol. 1649] A. As I understood, that was merely to boost income.

Q. You aren't using 5200 barrels daily allowable?

A. Yes.

Witness excused.

Chairman Bond: The Commission will recess for ten minutes.

[fol. 1650] B. T. MURPHREE, recalled, further testified as follows:

Re-examination.

By Reford Bond Jr.:

Q. You are the same Mr. Murphree who has heretofore been on this stand as an Engineer and as a Geologist?

A. Yes sir.

Q. Calling your attention to the oil wells in the oil producing zone of the Medrano sand, I'll ask you to state to the Commission if there is any difference in the present capacity of those wells to produce?

A. From the Commission records which I have examined it shows the wells capable of producing from 10 barrels per day through 550 barrels per day.

Q. The present allowable under the Commission Order,—I believe, is 200 barrels per day?

A. What they can produce, or 200 barrels per day.

Q. But wells that do not have the capacity to produce 200

barrels per day, their allowable is the amount which they can produce?

A. Yes.

Q. And wells having a present capacity to produce more than 200 barrels per day are restricted to 200 barrels per day?

A. Yes.

Q. Now, in cases where the oil wells have a present high capacity to produce, what does that indicate about the sand [fol. 1651] underlying and around those wells, as compared with the sand underlying and around wells with small capacity to produce oil?

A. With small capacity to produce oil,—with the same amount of Medrano sand open, same amount present in the well of high capacity, the high capacity well has indicated that it had a higher permeability than the low capacity well and if it had high permeability it would necessarily have to have high porosity.

Q. Is it or not your experience that wells with a high present capacity to produce oil, if operated as they are at present in the Medrano field, would produce substantially more oil than wells with a lower present capacity to produce oil.

A. Those wells with higher producing capacity would produce more oil.

Q. Even with the order now in force by the Commission?

A. Well, say you had two wells with different present allowable, one would produce 300 and the other 600 barrels per day,—there would be a little difference between those wells, due to the restricting factor, but with wells under 200 there might be a greater difference.

Q. As between two wells, what,—one of which had a present capacity to produce 600 barrels and one that had a present capacity to produce 300 barrels per day, which would produce more oil during the life of the well?

A. In the answer,—in the life of the well normally, the normal thing would be that the well with the higher capacity [fol. 1652] would hold out longer than the one with the lower capacity.

Q. Then, I understand you to say that between,—the 300 barrel capacity well would drop below 200 barrels before the other well would?

A. That's what I intended to say.

Q. Then, as the 300 barrel wells drops below 200 barrels the 600 barrel well will stay in there and produce 200 barrels?

A. Yes, that's right.

Q. That is what is to be expected?

A. Yes, that is normal.

Q. I'll ask you to state whether or not the plan offered by the applicant considers the present capacity to produce oil in the Medrano sand?

A. The 20 percent factor, they use in the present income, the 200 barrel well, if it is over 200 barrels there is no consideration,—there is no consideration for a well producing over 200 barrels per day.

Q. In your opinion is it equitable to consider the present capacity of the well to produce if you are going to consider the present production of the well?

A. If the income factor has been entered, the capacity to produce should be, yes.

Examination.

By Mar. Adams:

Q. The records of the Corporation Commission, to which [fol. 1653] you referred, do they list the separate wells and their ability to produce?

A. Those are merely 24 hour production tests made use of. There is one form for each well.

Q. Are there all the same date, or approximately the same date?

A. This particular date the test shown was February 1947, the early part of February. I don't know whether it would be difficult for you to find it or not.

Q. But do you know what those records show in respect to the Palmer-Sterba No. 4 well?

A. I think we had it here awhile ago, I believe it is 427 barrels. The Sterba No. 4, that test was in 1945. Here, the Sterba No. 4, 2-12-47, made 427.63 barrels with no water.

Q. Per day?

A. Per day, 24 hours.

Q. I assume the records to which you refer do not show the ability of the Palmer-Sterba No. 7 well, with respect to

oil production in 24 hours,—that well was completed in February?

A. It isn't in this file.

Q. Do you happen to know what the ability of that well was to produce?

A. No sir.

[fol. 1654] Examination.

By Mr. Williams:

Q. Mr. Murphree, the ability of a well to produce on a production test such as was there taken depends on many circumstances, does it not?

A. Yes, it depends on a great many circumstances.

Q. The extent to which, and where the pipe was perforated would have a bearing on that, would it not?

A. Yes.

Q. And the pressure at the time of the production test would have a bearing on it, wouldn't it?

A. All the pressure would have some effect, yes.

Q. The type of the pump in it would have some effect on it, wouldn't it?

A. Yes, of course the operator is going to put enough in there to get his allowable at least.

Q. Well, 200 barrels?

A. Yes.

Q. Are there any,—there was no incentive on the part of any operator to produce in excess of that?

A. That's right.

Q. These low capacity wells can be made into high capacity wells be shooting the well, can they not?

A. I don't know what the records show in respect to shots in the Medrano sand, I believe a shot down there would help, [fol. 1655] probably.

Q. Acid would effect the permeability down around the bore hole, would it not?

A. Shooting would work, but I believe acid would, in that sand.

Q. Now, there are many wells that have high permeability that will show more capacity to produce where, whereas, the

reserves behind that well are low and it will decline rapidly in the course of time, isn't that true?

A. In some cases that is true, yes.

Q. You wouldn't want to judge the reserves on a group of wells by their capacity to produce on a production test such as this, without making a study of their, well without making a study of the,—other things, would you?

A. No, but I would definitely want the capacity to produce to be in there.

Q. Now, if in your opinion, is the potential of a well, or its capacity to produce, the final criterion of the reserves under that well?

A. It doesn't indicate the reserves entirely, no.

Q. You would want to know more about the well than merely the production test, to determine its capacity up to 200 barrels?

A. Yes.

[fol. 1656] Examination.

By Reford Bond Jr.:

Q. These wells in the Medrano pool use about the same method of completion, do they not?

A. As I understand, they do.

Q. These pressures that Counsel asked you about are all about the same, aren't they?

A. The bottom-hole pressures in the pool have varied some 400 pounds in one local area,—they should be about the same.

Q. Counsel asked you about the back pressure,—those tests are usually made at about the same back pressure, aren't they?

A. The back pressures on the separator are usually about the same, yes.

Q. They all have about the same pump equipment, out there, don't they?

A. Well, the brands are the,—not the same, but the capacity to get the oil out of the holes is about the same.

Examination.

By Mr. Williams:

Q. Do you know about the perforating and shooting and how they are completed,—I want to know if you know when and where the several wells were perforated, the number of shots, the number of * * *

A. As far as I know, I have not shot records of these wells out there and we did make perforation records, but the way [fol. 1657] the Corporation Records, but the way the wells were completed when I was working out there, you set the pipe on top and drilled it into the producing horizon.

Examination.

By Mr. Adams:

Q. Was that uniform?
A. That was usual, general practice, so far as I know.
Q. It was uniform?
A. Yes.

By Mr. Williams:

Q. Do you know what other companies did?
A. About the shots, I don't know that.

By Reford Bond Jr.:

Q. Did they do much shooting down there in that field?
A. We didn't know of any wells that have been shot.
Q. Well, does that shooting down there make you want to change your estimate about the present capacity of these oil wells to produce oil?
A. No.

Witness is excused.

[fol. 1658] B. E. Johnson, calles as a witness, being first sworn, testified as follows:

Direct examination.

By Mr. Page:

Q. State your name, please?
A. B. E. Johnson.

Q. Do you live in Oklahoma City?
A. Yes.
Q. Now, what is your business, Mr. Johnson?
A. Oil Producing.
Q. You have several oil producing properties and wells in the state of Oklahoma, have you?
A. Yes.
Q. Are you now operating some tracts?
A. Yes.
Q. How long have you been an oil operator and producer?
A. Since '32.
Q. You have operated and are now operating leases in Seminole, Pottawatomie and various counties in the State?
A. Yes.
Q. Mr. Johnson are you familiar with what is know- as the West Cement Field, oil field?
A. Yes sir, fairly so.
Q. How long have you been operating in the West Cement Field?
A. Since 1939.
[fol. 1659] Q. Is that when you drilled your first wells there?
A. Yes.
Q. Now, do you know what is the West Cement Field, do you know what the West Cement Field, as it is referred to here in this application, do you know where it is?
A. I think so, yes, I'm satisfied of that.
Q. You know whether or not that West Cement Field is more than twenty years of age and has been in existence more than twenty years?
A. To the best of my knowledge it has, yes, from the records.
Q. Have you had occasion to drill and operate in various oil fields within the State of Oklahoma?
A. Well, in Pottawatomie County, Caddo County,——
Q. Just how well do you know what is commonly referred to as an oil field in this State?
A. Well, I think I know.
Q. Well, as to what is termed here the West Cement area or field, is that an oil field, in your opinion?
A. Yes sir.

Q. What is your definition of what is commonly known and referred to in the State of Oklahoma and has been during your time as an operator, as an oil field?

A. Well, it is where there has been some production in that area, regardless of the sands.

Q. In the West Cement Field about how many different [fol. 1660] producing horizons or sands are there, if you know?

A. To the best of my knowledge, I think about four, or three possibly.

Q. What are some of the producing horizons in the West Cement Field, other than the Medrano?

A. The Noble-Olsen, the Niles, and oh, that sand that runs in streaks, what is that?

Q. Is there one known as the Rowe?

A. Rowe, yes.

Q. Do you have wells producing in the West Cement Field?

A. No sir, not now. Oh, yes, I do in the Noble-Olsen, yes.

Q. In the West Cement Field?

A. Yes.

Q. You are one of the protestants are you?

A. Yes.

Q. You have filed your protest?

A. Yes.

Q. Your son-in-law, M. L. McIntyre, is one of the protestants?

A. Yes.

Q. Did you protest Unitization?

A. Yes.

Q. Are you familiar with what is known as the Plummer land, the East Half of 34-6N-10W?

A. Yes.

Q. I'll speak of the Plummer East 80?

[fol. 1661] A. Yes.

Q. Did you originally own the Plummer East 80?

A. Yes.

Q. You and your partner?

A. Yes.

Q. I'll ask you,—hand you what has been marked by the Reporter as Exhibit 118, and ask you what that is?

A. This is an oil and gas lease made to Hall & Briscoe.

Q. By whom?

A. Well, by N. T. Plummer and Florence Plummer, husband and wife.

Q. On what land?

A. The East Half of the Southwest quarter of Section 34, Township 6, North, Range 10, West I. M.

Mr. Bond: We offer it in evidence.

Chairman Bond: Received.

Reporter's Note: Exhibit 118 is at this time read to the Commission.

Q. Now, I'll hand you what has been marked Exhibit 119 and ask you to state what that is?

A. That is the assignment from Hall & Briscoe to me, covering the same land.

Reford Bond Jr.: We offer in evidence Exhibit 119.

Chairman Bond: Received

Reford Bond Jr.: I want to read this to the Commis-
[fol. 1662] sion.

(Reporter's Note: Exhibit 119 is at this time read to the Commission)

Reford Bond Jr.: If the Commission please, we want permission to withdraw this original assignment and substitute with a photostatic copy.

Chairman Bond: Permission granted.

Q. Mr. Johnson, how many wells are there now producing from the Medrano sand of this lease, the Plummer East 80?

A. Two.

Q. How long have they been on there and been producing wells approximately?

A. Three years,—one is three years and the other not quite three as I remember right.

Q. You and the Stephens Petroleum Company drilled these wells?

A. That's right.

Q. They were drilled under the order of the Court?

A. Yes.

Q. You were in litigation with Stephens at the time?

A. Yes.

Q. They are known as the Plummer-4 and Plummer-5?

A. Yes.

Q. Are these wells making their allowables?

A. Yes,—they have run behind but they have made up. That is on account of the pump having been out of order.

[fol. 1663] Q. As long as the pumps worked all right they made their allowable easily, of 200 barrels per day?

A. Yes.

Q. Now, adjoining this lease, on the Plummer West 80, how many are there?

A. There is only one well in the Medrano.

Q. What do you and your son-in-~~law~~ have in the Plummer West 80 of a working interest?

A. I have 1/7 and my son-in-law owns 1/14 below 3600.

Q. And you own all of the lease above 3600?

A. Yes.

Q. Did you sign this application that has been submitted here to the Commission, asking that this Plan be put in operation?

A. No sir.

Q You understand that your mining partner signed it, Stephens?

A. Yes, I understand he did.

Q. You didn't sign it?

A. No.

Q. Are you inquiring,—are you in favor of this Plan?

A. No sir.

Q. Why?

A. Because it takes away from what I have and adds it to somebody else.

Q. Are you familiar with the well on the East 80,—the [fol. 1664] Medrano well?

A. Yes.

Q. What kind of a well is it?

A. Well, it didn't come in as strong as the original well on the East 80.

Q. Do you know whether it made its allowable?

A. Yes, it makes its allowable?

Q. Does it make it's allowable?

A. Yes, as far as I know.

Q. Now, some testimony,—Mr. Johnson, from your experience as an oil operator, is it or is it not your opinion that this Plummer lease, these Plummer leases have been properly developed?

A. No, I don't think so, at the present time, under the regulations.

Q. Do you know why they never drilled but one well on the Plummer West 80?

A. No sir, I do not.

Q. Do you know how long ago it was the first producing well was drilled in what is known as the West Cement Field?

A. I can- tell exactly, but to the best of my recollection, it was in '21 or '22, some place along in there.

Examination.

By Mr. Adams:

Q. To clarify this one thing, Mr. Johnson, you were asked by your counsel about the equity assigned to the East [fol. 1665] Plummer 80 and to the West Plummer 80,—your counsel gave you the percentage figures and you said those were right,—have you said, have you meant by that, that you were satisfied with them or that the figures were about the same?

A. The figures were about the same.

Q. You say they are right, you mean that,—you do not mean that they were satisfactory to you?

A. No sir.

Examination.

By Mr. Williams:

Q. Mr. Johnson, I understand your testimony, as I understand your testimony you originally owned these two Plummer leases?

A. One of them.

Q. And you made an assignment to the Stephens Petroleum Company of your interest?

A. No sir, I did not.

Q. Where did you get it? I mean where did Stephens get it?

A. Mr. Rollins was supposed to be a partner of mine at the time it was being made, and later *it* on I conveyed to him his half, and he sold to the Stephens Petroleum Company.

—. ——.

[fol. 1666] A. June, 1939.

Q. Do you know what the discovery, or when the discovery well in the West Cement field was drilled?

A. Medrano sand or field?

Q. Medrano sand or field.

A. No, I could not say exactly, I have seen the record; it is hearsay, along in 1921 or 1922 or 1923, I would not say positive when, I went out to drill this well, the one on the Oaks and Sturba and——

Q. Did you have any other interest in the Medrano other than in which you testified?

A. That is all.

Q. Any other royalty?

A. No.

Q. You testified as to certain other fields or pools, what pools are those?

A. I have a little interest in the Town of Cement, I did have a lot of interest at one time in Pottawatomie county.

Q. What interests in Pottawatomie County?

A. St. Louis and Maud.

Q. Are you acquainted with the Fitts pool?

A. Only hearsay.

Q. You know where it's located?

A. Yes, sir.

[fol. 1667] Q. Do you have any interest in the Cushing pool?

A. No, sir.

Q. You know where it's located?

A. Yes, sir.

Q. Do you know what is referred to as the Mid-Continent pool?

A. I don't know exactly, but it's termed as most all the pools, I couldn't say exactly, I couldn't say.

Q. The Mid-Continent pool is the Mid-Continent area?

A. That is the way I understand it.

Q. Seminole, Cushing and Kansas area, all of that is in the Mid-Continent pool?

A. That is the way that I understand it from hearsay.

Q. That is also referred to as Mid-Continent field.

A. I couldn't say, because I don't know except as far as hearsay is concerned.

Q. Before you came out here, before you went on the stand, you discussed with your counsel, didn't you, on the meaning of the word "field:" and "pool?"

A. Yes, we talked it over several times.

Q. And talked it over since noon.

A. He said he wanted me to come out and testify about what the "field" was.

Q. He told you what other witnesses testified to as to "field" and "pool."

[fol. 1668] A. No, he didn't tell me that.

Q. You know, do you not, that the field's pool is more than one sand?

A. I understand it is.

Q. And you know the Cushing pool is more than one sand?

A. Yes.

Q. As a matter of fact, you have heard the terms "field" and "pool" used interchangingly by lawyers, geologists, and lease brokers and everyone in the business.

A. Well, different ways.

Witness Examined by Jack Page:

Q. Did you ever hear of the West Cement field being called anything but the West Cement field?

A. That is all.

Q. You never heard it referred to as West Cement pool?

A. No, sir.

Q. Counsel asked you about my telling you to testify, I called you on the telephone and tried to get you here and you have been out of town?

A. Yes.

Q. I called you on the phone and asked you to come out and testify?

A. Yes.

[fol. 1669] Q. And that was the substance of our conversation?

A. Yes.

Mr. Williams: I didn't imply that counsel told him what to say, I am and have more confidence in Mr. Page than that and more respect and regard for him.

Mr. Page Continues with the Witness:

Q. You know what a field is without my telling you?
A. Yes, sir.

Mr. Williams: I have too much respect for Mr. Page to say that he would do that.

Mr. Adams Examines the Witness:

Q. Counsel asked about Midcontinent area being referred to as a pool, on second thought, did you ever hear the Mid-Continent Oil and Gas area referred to as Mid-Continent pool?
A. I never did.
Q. I never did and I thought that you had heard it referred to as Mid-Continent pool.
A. I never did.
Q. Mid-Continent area, did you ever hear it referred to as field or pool, wasn't it always referred to as Mid-Continent area?
A. I understand that Mid-Continent field is a number of pools of oil.
Q. You heard it referred to as Mid-Continent field?
A. That is my understanding.
[fol. 1670] Q. That is all right, but I never heard it referred to as that, it was always Mid-Continent area.
A. I heard it as Mid-Continent field, I never kept up with it on those things.

Jack Page Continues with the Witness:

Q. Speaking of these fields that they interrogated you about, have you drilled a number of wells on the Cement townsite?
A. Yes, sir.
Q. How many?
A. Five.
Q. What is that known as?
A. Cement field.

Q. Is that separate and apart from the West Cement field commonly referred to as West Cement field?

A. It's commonly referred to as Cement field and West Cement field.

Q. Have you ever heard of it as anything else?

A. No.

Q. That is all.

Witness excused.

Jack Page: We rest as far as this protestant is concerned.

Reford Bond, Jr.: We rest, your Honors.

Mark Adams: We rest, your Honors.

[fol. 1671] Chairman Bond: Rebuttal testimony.

Whereupon, JACK MONTGOMERY is recalled to the stand as a rebuttal witness by the applicants.

Witness examined.

By Mr. Williams of Phillips Petroleum Co.

Q. State your name.

A. A. J. Montgomery.

Q. You are the same Mr. Montgomery who has previously testified in this proceeding?

A. I am.

Q. Mr. Montgomery, did you hear the testimony of Mr. Murphree with respect to the Potter-Davis Well No. 1 in Tract No. 54?

A. I did.

Q. Have you had occasion to examine the exhibits introduced by him, being Exhibit No. 116?

A. Yes, sir.

Q. Have you had occasion, Mr. Montgomery, to examine and study the electric logs and the wells shown on Exhibit 116?

A. I have, yes, sir.

Q. With respect to how many other wells in the West Cement field have you had occasion to examine the electric logs.

A. Well, all that had electric logs run on them.

Q. Approximately how many were there?

A. Approximately 50 or 55, something like that.

[fol. 1672] Q. Have you examined the samples on any of the wells in the West Cement field?

A. Yes, sir.

Q. On approximately how many wells?

A. I would say certainly at least one-half of them.

Q. Did you have a geologist working under your supervision and direction personally examine them?

A. Yes, we examined all of them.

Reford Bond, Jr.: We object to any samples that were examined by any geologist working under his supervision.

Chairman Bond: He may testify as to work under his supervision.

Mr. Williams Continues with the Witness:

Q. And have you had occasion to see all sample reports and results of these examinations of these under your supervision.

A. They are in the file.

Q. As part of the company's records?

A. Yes, sir.

Q. And have you studied these logs?

A. Yes, sir.

Q. Are you acquainted with the location of wells shown on Exhibit 116?

A. Yes, sir, all the wells.

[fol. 1673] Q. I wish you would, Mr. Montgomery, for the benefit of the Commission, give your interpretation of the facts with respect to the Potter-Davis well as reflected by Exhibit 116 and as determined by your examination of the logs and samples and wells in the field and knowledge of the field, generally, as to respect of being in the Medrano sand or some other sand.

Reford Bond, Jr.: I would like to ask the witness one or two questions to qualify him.

Chairman Bond: You may.

Reford Bond, Jr., Examines the Witness:

Q. Did you see the samples of the Potter-Davis well?
A. I have not.
Q. Did you see the cores when taken from the well?
A. Several of them.
Q. Who were present?
A. Mr. Potter, Mr. Lacey Rowland, Mr. Willard Miller.
Q. Anyone else?
A. To the best of my recollection, I think they were the ones I say I saw in Mr. Miller's office.
Q. Were these people present in Mr. Miller's office or were you at the well?
A. I went over to Mr. Rowland's office and Mr. Potter was present and they said they had them at Mr. Miller's office.
[fol. 1674] Q. You did not see the cores taken from the well, but in Mr. Miller's office?
A. Yes.

Mr. Williams: Did you see them at the request of Mr. Potter?

A. Either he or Lacey Rawlins.

Reford Bond, Jr.: Mr. Potter was present?

A. I am quite sure he was.

Mr. Williams Continues with the Witness:

Q. You all went down together to look at them?
A. Yes, sir.
Q. Who is Mr. Miller?
A. Geologist with Ramsey Petroleum Company who made the Farmite deal with Mr. Potter.
Q. What interest did he have in the well?
A. An overriding deal.
Q. And he is the geologist?
A. Yes, sir, he practices that profession and has for a number of years.
Q. Go ahead.
A. It so happens that the cross section was drawn as a complicated angle and to make a clear picture of the Potter No. 1 Davis that is shown in Exhibit 54-R, we will retain

on Amerada-Hartshorn lease the patch of the cross section which crosses the Edwards fault twice and No. 1 and No. 2 [fol. 1675] Hartshorn of Amerada are normal sections, in Medrano while we go to Amerada No. 1 Edwards and to the east of the No. 1 Hartshorn, you notice that upper line marked A-A' in the case, a decided drop in this line, it so happens that this horizon is correlated as a nile sand zone that is productive back to the northwest and easily identified on all electric logs as well as all sample logs. The well is low as it reached a nile sand zone, but it crossed the field immediately along there and lost all the wade sand section and also it is a funk zone black—zone, then it came immediately across there, (indicating) and started running high in the shale section in the Medrano zone, consequently it reached there (indicating) and on here (indicating).

Q. What fault is that to which you make reference?

A. Edwards fault, the cross section, then goes to No. 6 Edwards drilled by Magnolia and located in the NW¼ of one, the well was drilled and had a relative normal section and reached to the Medrano sand and had a slightly lengthening section before the sand was reached, unquestionably the committee of geologists placed as market sand and that is the Medrano sand, 2300 feet.

Q. What was that?

A. Because it crossed the fault as denoted on the side as No. 6 Edwards.

Q. Is that shown on Exhibit 54 as Medrano sand?

[fol. 1676] A. No dry hole and Medrano sand absence by faulting. Subsequent to this drilling and the producing of this well, they then went in and attempted to—No. 6 and crossing it high in the hill to reach the up course and get the Medrano sand where it would be productive and it is now productive and figured they could save money by drilling a new hole. Mr. Farman, a member of the Committee, and I discussed it as to where they would drill it and they eventually drilled a No. 7 which is the next well on the line of cross section, the well here (indicating) the No. 7 Edwards is crossing the fault as it reached the Medrano sand, it actually did get the Medrano sand on the high side of the fault, or northwest side of the fault, the sand was started in cores and fractured and broken up, and consequently the

sand section found in there in that well is not a true representation of what it would be in productivity, 100 feet to the northwest it represents in this well as influenced by the fault itself.

Q. Were you present at different times at the drilling of these wells and have personal knowledge of what you have just discussed.

A. No, but I kept close contact with them and did go on all leases from an academic standpoint.

Q. At the time of the drilling of the wells?

A. Yes.

Q. Go ahead.

[fol. 1677] A. A- early test brought out, I believe, Phillips Petroleum Company, sand zero, a map pertaining to a Medrano of Cement and they claimed that we changed that map considerably, I believe that was changed and the one that made it in the Bartlesville office was not familiar with the things and made it hurriedly, we did not call that Medrano; going to Potter No. 1 Davis, that is, wells located to the north, to the east and south and southeast and southwest surrounding this area of the Davis which I believe unquestionably proves that Potter No. 1 Davis had the Medrano sand and the sand in the bottom of the hole is Medrano.

Q. Have you personally examined the logs in that area that you made reference to?

A. Yes, not only myself, but the Committee of geologists did have a period of time so that prior to drilling the No. 1 Davis—there was no later information that would change their minds as to what it was.

Q. What are the facts in connection with these other wells that lead you to the conclusion that the sand in the Davis well is the Medrano sand?

A. Anderson-Prichard No. 1 A Davis, inspection 6-5-9, as I recall, drilled out, the so-called Kistler zone, that is roughly 1600 or 1800 feet below the margin, geological section, the No. 1 A Prentiss was drilled considerably deeper [fol. 1678] than the Medrano sand zone. Peppers No. 1 Grinich was drilled deep, the Magnolia No. 6 Medrano was drilled through the market sand, at least there was no reason that we should—that should be anything other than sand in that geological section, that so happened to fit in the

sand and be the Medrano, consequently, it's a process of reasoning.

Q. How does the section in the Potter Davis well in the top of the Niles sand and top of the sand show at the bottom of the log as compared with the section between the Niles section and the Medrano sand as found in other wells in the vicinity.

A. Checks nicely.

Q. Would you say that there is a normal section intervening between the Niles sand and top of the Medrano?

A. Yes.

Q. And correlative—I mean, consequently, a normal section. Is that correct?

A. Yes, sir, that is correct.

Q. —has been called to the fact that the—in the electric logs appearing at the bottom of the reproduction of the electric logs varies in some respects to the—to the other logs of the Medrano sand wells in the field that have the appearance of the Potter well as shown on this exhibit (indicating)?

A. I think so.

[fol. 1679] Q. You think so?

A. I have not compared them in great detail, but there is no basic difference.

Q. I believe that some reference was made to the effect that there was some absence of conglomerate above the Medrano in the Potter well?

A. Yes, sir.

Q. Is that conglomerate now even in every other well in the field?

A. No.

Q. Are there other wells there with very light characteristics with respect to the absence of a conglomerate?

A. Going down to No. 1 Hartshorn, it did not, and another had, No. 2, Amerada, No. 1 Edwards had no conglomerate, and Magnolia No. 2, Edwards.

Q. Are they Medrano sand wells?

A. Yes, sir, and several other wells have only a slight conglomerate or cherry pebbles.

Q. Is there anything from the examination of the cores of the wells that led you to believe it wasn't Medrano sand?

A. No.

Q. You have not examined the samples in that well?

A. No.

[fol. 1680] Q. Why haven't you?

A. They were were no sand through the sample cuts, I believe Mr. Murphree told me he would make them available to me, if I thought I needed them.

Q. I believe you testified that the log on Exhibit 116 to the right was, in your opinion, a market sand well along line B-B*?

A. That is right.

Q. Now if that well is removed from the exhibit, what would be the course of the line B-b*?

A. It would have a very, a gap in it.

Q. But, if you continued the line?

A. You were to disregard that well entirely, it would be a point shown on Magnolia No. 7, Edwards, to a point on Amerada No. 1 Edwards.

Q. And the Davis well will have an abnormal position along that line?

A. That is right.

Q. How long have you been in the oil business?

A. I am not in the oil business, I work for Phillips Petroleum Company.

Q. Phillips are in the oil business.

A. Yes.

Q. Your work takes you in every pool in the State?

[fol. 1681] A. Yes.

Q. How long have you been in the business that brings you in contact with them?

A. First company in 1922.

Q. How many fields or pools in the State of Oklahoma are you familiar with, approximately?

Reford Bond, Jr.: Objection, as repetition.

Mr. Adams: That is not proper rebuttal.

Chairman Bond: Overruled.

[fol. 1682] A. Well, I would hesitate to try to name all of them,—I am fairly familiar with quite a few.

Q. In connection with your trade and your association with the oil business have you had occasion to know and become acquainted with the name of such terms as the term,

"pool", and "field," as used in common parlance in the industry.

Mr. Adams: Objected to as not proper rebuttal.

Chairman Bond: Sustained as to "pool", but as to the term "field", as I remember you may ask him as to "field" or you may refer to the records if you like.

Q. Are you acquainted with the use of the term, "field", as that term is generally used in the oil business?

A. I think I am, yes sir.

Q. I'll ask you, Mr. Montgomery, whether or not that term is used synonymously with the word "pool", in common parlance?

Reford Bond.: We object to that as assuming he asked him as common parlance, not in the oil industry.

Chairman Bond: You may answer as "in common parlance":

Reford Bond Jr.: I object as the witness is not qualified.

Chairman Bond: The witness says he is, that he has been working for oil companies 22 years.

[fol. 1683] Q. Have you had occasion to observe the use of the word, "field", in connection with common parlance, as used in every day conversation in the oil business and general common parlance?

A. Yes, I have been in contact with a number of different types of people.

Q. Well, do you think you have knowledge of the meaning of the word "pool", as it is used in common parlance?

A. Yes.

Q. Well, what is it?

Reford Bond Jr.: He hasn't qualified him yet, he asked him if he thought he knew.

Q. Well, do you know?

A. What?

Q. In the common meaning of the word "pool", as used in every day parlance?

A. Well, "field" would mean everything from——

Reford Bond Jr.: We move that the answer be stricken.

Chairman Bond: Sustained. The answer is stricken.

A. Well, I think I know.

Reford Bond Jr.: We object to that.

Chairman Bond: Let him answer whether he knows.

Mr. Williams: I asked him if he knew.

Chairman Bond: Well, he didn't say that, he said he thought he knew.

[fol. 1684] A. I know what the word means in common parlance.

Chairman Bond: You may answer that.

A. "field", as I have heard it expressed and as I have expressed it myself and as I understand, means range.

Reford Bond Jr.: We object to what he understands.

Chairman Bond: He said he knew, he may testify what the word "field", means in common parlance.

A. "field" such as the Oklahoma City field, West Edmond Field, or any of the innumerable fields in Oklahoma.

Q. If I were to ask you where the Wilcox field is would you know what I was talking about?

Reford Bond Jr.: We object to what he understands.

Chairman Bond: Overruled.

A. Well, the Wilcox field, I don't know whether I can hardly define it close enough——

Q. Well, if I was to say the Oklahoma City Wilcox field?

A. Well, that's located in Oklahoma, Cleveland,—Oklahoma and Cleveland Counties.

Q. If I were to ask you the location of the West Cement Medrano Field, would you know what I was talking about when you heard the word used in common parlance, "West Cement Medrano Field",—would you know what was meant by that?

A. Well, I think so, I know I would.

Chairman Bond: You asked him if he knew what the [fol. 1685] West Cement Medrano Field means, when you know that is a sand.

Mr. Williams: I asked him, I gave him the name of a particular area and asked him if he knew what that meant.

Chairman Bond: Well, you gave him the name of a sand, a sand field,—the question is what the word "field" is, in common parlance.

Q. Does the word, "field", in common parlance have a fixed and definite meaning, to you?

A. I do.

Q. Doesn't have a fixed and definite meaning?

A. It does not.

Q. Are there any other words used synonymously in common parlance, with the word "field"?

A. "pool" is used in common parlance, synonymously with "field".

Examination by Mr. Page:

Q. What do you mean, Mr. Montgomery, when you put on this Exhibit, "West Cement Medrano Unit"?

A. Well, that's the entire,—it's another common term.

Q. Unit of what?

A. Unit of the West Cement Field.

Q. You mean the West Cement Field, don't you?

[fol. 1686] A. West Cement Field, yes.

Q. You didn't mean to refer to this map as a map of the West Cement Medrano Field?

A. That wasn't the purpose of the map.

Q. You meant to describe an area?

A. That's the reason for the title.

Q. Well, the West Cement area is known as the West Cement field?

A. Yes.

Examination by Mr. Adams:

Q. Is the Medrano sand located any other place in Oklahoma?

A. Not to my knowledge, no sir.

Q. So, by the use of the word, "West Cement" that locates the area, doesn't it?

A. That's right.

Q. That locates the place where the various sand bodies happen in this case to exist?

A. That's right.

Q. You wouldn't say the "West Cement-Niles Field" or the "West Cement-Rowe Field", but you would say the "West Cement Field, Medrano section", wouldn't you?

A. Well, that's according to who you would be talking to.

Q. Well, if the Medrano sand if not found in Oklahoma any where else than in the West Cement Field, why would [fol. 1687] you use all of that,—why do you say "West Cement Medrano Sand"?

Mr. Williams: We object to him arguing with the witness.

Chairman Bond: Let him ask the witness,—I want to see what the d-finition of "field" is.

Q. Do you understand me, Mr. Montgomery,—you don't call that the West Cement-Niles Field, do you?

A. Well, if you were talking about the Niles production in the West Cement Field and you say "Niles Field" because "pool" and "field" have been used synonymously in every place I have ever been.

Q. With respect to one horizon?

A. Not necessarily,—sometimes the words fit on nicer, now it fits "pool", that sounds better than Fitts "field". They say "Fitts Pool" because it sound better. There has been discussion for years of expression.

Examination by Mr. Page:

Q. Mr. Montgomery, do you have, have you ever, in your experience ever heard of this area being called the Medrano Field?

A. I can't say that I have, no sir.

Q. It has always been known as the West Cement Field, hasn't it?

A. Yes, which embraces,——

Q. Now, don't add to it, it has always been known as the West Cement Field?

[fol. 1688] A. Yes.

Examination by Mr. Williams:

Q. You heard Mr. Keplinger's testimony in this case?

A. Part of it.

Q. And you heard him testify to facts and say "West Cement Medrano Field".

Counsel for Protestants: We object to that.

Chairman Bond: He may answer.

Q. Mr. Montgomery, a field or pool is made up of sand or limestone——

Reford Bond Jr.: We object to that.

Chairman Bond: You have had that testimony in the record.

Examination by Mr. Page:

Q. Mr. Montgomery, what was this field known as before they discovered the Medrano sand?

A. The West Cement Field.

Examination by Reford Bond Jr.:

Q. Mr. Montgomery, I will call your attention to Exhibit 116, on the blackboard, which you referred to awhile ago and asked me to look at it, is that a fair representation of the electric log to which it is supposed to represent?

[fol. 1689] A. I think so, yes.

Q. Do you think that is a good map cross section?

A. This cross section is very good, it is a matter of interpretation from that cross section.

Q. Do you think it is a correct representation of what it is supposed to disclose?

A. No, for instance, what I pointed out in the No. 6 Edward-Magnolia——

Q. Well, do you mean to say that the Medrano sand pinches out to the bottom of segment "E"?

A. No, not at all.

Q. Then, why wasn't it in this Magnolia well?

A. I believe it has been shown in previous testimony that ——by crossing a fault at a low angle,—that it might be missing by crossing this fault.

Q. Will you point out the location of the No. 6 Edwards-Magnolia well as disclosed by your Exhibit 54?

A. Here it is (indicating in the Northwest Quarter of Section 1-5N-10W).

Q. Well, point it out?

A. Right here (indicating on plat)

Q. On which side of the fault does it appear to be on?

A. It would appear to be on the down-throw side.

Q. That is the East Side?

A. Yes.

[fol. 1690] Q. And it's in segment "E"?

A. That's right.

Q. What segment of the bottom of the hole in?

A. It would be in the West of segment "D".

Q. The bottom of it is in segment "D"?

A. That's right.

Q. Now, do you show that well shown on the fault to be where?

A. If you take the measurement laterally it would be possibly a couple of hundred feet over here (indicating on plat).

Q. Then, why don't you show the fault line there at that well instead of to the West of it?

A. Because the fault line is shown as near as we could determine it on the Medrano sand zone.

Q. Well, you told the Commission it was exactly on this Medrano sand?

A. No, I said it crossed the fault prior to getting to the Medrano sand.

Q. Then, why don't you put the fault East of the Magnolia well?

A. For the reason I have just stated.

Q. Well, you say you started drilling the well on the East side of the fault?

A. Yes.

Q. And you drilled through the fault, over to the West side?

[fol. 1691] That's right.

Q. And you show the fault to be on the West side of the well?

A. Yes.

Q. Now, do you mean to tell the commission that the bottom of the hole is on the West side of that fault line which you have drawn on this map?

A. Yes.

Q. And the top of it is on the other side? The East side?

A. Yes, that's right.

Q. Well, in fact it would be hard to determine. A great number of wells are drilled—didn't you say you know which side of the fault the bottom of the well is and on

which side the top of the well is? Do you mean you can't tell the Commission how wide that fault is?

A. No sir, I can't, with any degree of accuracy.

Q. Will you estimate it with reference to the surface fault?

A. No,— —

Q. You indicated to the Commission the distance between the Medrano section on the West side and the East side of the fault, didn't you?

A. No sir, I didn't do that.

Q. Do you say that you can't determine that?

A. No sir, you can't.

Q. And how do you explain to the Commission this Magnolia well No. 6 being in the Medrano sand?

[fol. 1692] A. Because it crossed the fault before it reached——

Q. Right there, will you indicate the point to the Commission, at which it crossed the fault?

A. In the hole?

Q. Yes.

A. In the hole, it crossed it——

Q. Well, show the Commission the point at which it left the East side of the fault?

A. You understand that this is a big scale section map here, and here is a big shale section (indicating on plat) and it crossed in that shale section.

Q. Can you show the Commission where it crossed?

A. Yes, possibly a couple of hundred feet in the hole.

Q. All right, show them?

A. About there (indicating on plat)

Q. Now, show where it came out on the other side?

A. About here (indicating on plat)

Q. Then, how many feet was it before it crossed that fault?

A. I don't know.

Q. Was it an inch——

Mr. Williams: We object to that, the witness said he didn't know.

Reford Bond Jr.: All right, I'll ask him something else.

[fol. 1693] Q. Now, why didn't you examine the samples in this Potter well?

A. Well, in the first place it wasn't convenient and in the second there was no necessity for it.

Q. You thought it wasn't necessary?

A. Not with the surrounding information we had.

Q. In other words, when you have as much information as you have in this case you are not interested in any more information and you throwed the samples out the window, so far as the Potter well was concerned?

A. Not necessarily throw them out the window.

Q. Well, you disregarded them, then.

A. I did not look at them.

Q. Well, you disregarded them?

A. No, I wouldn't say I disregarded them.

Q. You didn't look at them?

A. No sir.

Q. You didn't see anybody's report for what they looked like?

A. I did not.

Q. And you didn't consider the samples in making your determination, did you?

A. As I said before, I didn't think it was necessary.

Q. I will ask you again, if it isn't a fact, and if you didn't think your determination without even looking at the samples of this Potter well?

[fol. 1694] A. Well, as qualified, that's what I said, yes sir.

Q. Now, then, are you familiar with the electric log on the Anderson-Prichard No. 1-A Davis?

A. I have studied it, yes sir.

Q. You have studied it. And you mentioned that that well and its condition in your testimony to the Commission on direct examination, did you not?

A. I think so, yes.

Q. And I'll ask you if you didn't tell the Commission that the section between the Niles-Medrano in the Anderson-Prichard 1-A Davis was shorter or the same as the section in the Potter-Davis?

A. What do you mean,—"shorter"?

Q. Well, I'll say just the same, then?

A. They are approximately the same.

Q. They are approximately the same,—now, how many feet do you mean to allow by the word, "approximately"?

A. Oh, generally speaking, 50, 60, something like that.

Q. You wouldn't go as strong as 200, would you?

A. No, on this fault——

Q. I want to know if you would go as far as 200 on this section between the Niles and Medrano in this particular Anderson-Prichard-Davis 1-A and the Potter-Davis well,—do you think you want 200 feet of latitude there or are you satisfied with 60 or 75 feet?

[fol. 1695] A. I don't believe there is a variation of 200 feet.

Q. Will you say as much as 65 or 70?

A. Yes.

Q. And is that about right?

A. Well, what one might say about the Medrano sand——

Q. Mr. Witness, will you say, is there 65 or 70 feet,—you are looking at that log, aren't you?

A. Yes, I am.

(Reporters Note: At this point the Commission recessed until 10:00 A.M. July 24, 1947.)

[fols. 1696-1697] Chairman Bond: You may proceed in C. D. 1308.

Reford Bond, Jr.: We will ask that we be allowed to reopen the case.

Chairman Bond: Very well, the Commission will reopen the case and you may reopen at any time.

[fol. 1698] Mr. Murphree recalled to the stand.

Reford Bond, Jr. Examines the Witness:—

Q. You are the same Mr. Murphree that testified in this case and testified as a petroleum geologist in this case?

A. I am.

Q. I call your attention to certain tracts which appear on applicant's exhibit 24 and numbered 1, 2, 3, 66, 67, 69, 68, 70, 61, 59, 51, 44, 33, and 50, which are all so-called tracts and ask you to state whether or not in your opinion there will be any material adverse effect on any of these tracts if left out of the unitization plan by reason of the operation of the unit, if it is created and ordered by the Commission.

A. Due to the location of these tracts on the edge, I cannot see an adverse effect in my opinion that the unit will have on these tracts.

Q. That is, that the unit operation would have?

A. That is right.

Q. That is all.

Mr. Adams Examines the Witness:—

Q. Mr. Murphree, assume that the unit proposed, the unitization as approved as to the portion of the Medrano area lying within the segments A and B, but not as to the portion of the Medrano area in Segment C, D, and E, would in your opinion, there be any material adverse effect as the result of operation of such a unit on the production of the [fol .1699] Medrano area in Segments C, D, and E?

A. If the Sturba fault sealed off between B and C there would be an adverse effect.

Q. And, in your opinion, I believe you said that it did seal, it ought.

A. I stated that the evidence would show that it was sealed off in there.

Q. Now then, if a unit such as here proposed were placed in effect in Segments C and D with respect to Medrano area and sand unit was operated with that, in your opinion, have any material adverse effect on the operators for production of oil or gas for the Medrano area in Segment E?

Mr. Williams: We would like to object to that as not being pertinent information here, if the unitization is put in only C and D, that it would have adverse effects on the others, there is nothing like that proposed in the plan, it will either be all or none.

Chairman Bond: It will have to effect the pool.

Mr. Williams: The plan is that the entire field be put into operation, if that isn't done, it fails.

Chairman Bond: You may answer as to the plan and how it could effect it, how it could affect a segment without effecting the plan, the plan is what the Commission has under consideration, now if there is an impervious fault [fol. 1700] there, that will effect the plan as to whether the fall tracts will effect the plan, if there is sufficient evidence there, then we want to hear it.

Mr. Williams: If there is no impervious there, that is to separate sources of supply then the whole plan fails.

Mr. Adams: That is my thought too.

Chairman Bond: That is one thing that bothered the Commission as to fields, you might refer to Mid-Continent field or the Medrano field and the land only refers to the Medrano sand, you go far afield, there as to what the intent of the Legislature is as to the use of the world "field:" and as these reservoirs have numbers of sands or one sand, a field may have three sands or two sands, or may—two sands may be depleted, then when you go to unitize the last two sands, the third sand would be, the intent of the Legislature which is referred to by them, and you can't unitize except in a common source of supply, all the other sands have—on unitization, what did the Legislature mean when it said "field?" These are questions that confront the Commission.

[fol. 1701] After further proceedings off the record a recess was had, following which recess, and on the same date, the witness, B. T. Murphree, was recalled to the stand and further testimony was offered.

Examination—by Mr. Williams.

[fol. 1702] Q. Mr. Murphree, assuming that the judgment of the geological committee was accurate in the fixing of the geological boundaries of the pool and assuming that there is oil and gas in the Medrano sand or, oil or gas, in the Medrano sand underlying the tracts to which you have made reference, that oil or gas will be recovered by the Unit through it's unitized program of gas injection, will it not, or a substantial part of it will be recovered?

A. Your question is rather difficult to answer, since there is no location of any of the wells to be drilled shown, and, to get that oil under some of those tracts there would have to be more wells drilled in the proper place to pick up that oil,—there would have to be wells drilled on some of those tracts.

Q. You heard the testimony, that the Unit, when organized, proposes to drill additional wells?

A. I did.

Q. Now, if additional wells were drilled in accordance with good engineering practice to recover the oil and gas

and if those wells were drilled, then in your opinion that gas and oil would be recovered from these tracts?

A. Yes.

Q. Then, to that extent, the Unit operations will remove from under the tracts the oil and gas there located, or the recoverable percentage of it?

A. Yes.

[fol. 1703] Q. And, to that extent, these tracts will be adversely affected by the Unit Operations if they are not take- in?

A. Well, as I said, if they are not taken in, there won't be too much oil recovered from them. In fact, there will be some oil shoved down on them if the gas, for the gas will increase the saturation in the sand.

Q. And the Unit Operations may shove some gas or oil, or gas and oil across the tracts into other tracts within the Unit area, will it not?

A. In one or two cases, that might be likely, but most of these tracts are in,—are on the edge.

Q. Isn't it a fact that under Unit Operations where you keep control that you have a cross-drive,—in other words the drive can be in all directions, can it not?

Reford Bond, Jr.: If the Commission, please, we object to that for the reason that there has been no evidence showing that that would be the Plan.

Chairman Bond: Counsel has asked a hypothetical question,—if he is going to develop it along those lines it will be admissible,—if not it will not be admissible.

Mr. Williams: Mr. Kaveler testified that additional wells would be drilled, according to good general engineering practices.

[fol. 1704] Chairman Bond: Well, that's highly speculative because you don't know where the well is going to be drilled, even if it is good engineering practice.

Mr. Williams: Let me put my question this way,——

Q. Mr. Murphree, assuming that the geological committee was correct in its judgment as *of* its outer boundaries of this area and assuming that there is inter-communicating permeability, as this same witness testified to, then, in your opinion wouldn't any operations carried on by the Unit by

the geological boundaries of that pool, have an effect upon all parts of the common source of supply?

Reford Bond Jr.: Objected to because the question assumes there would be that condition.

Chairman Bond: You might ask if it would have any effect,—overruled, and exceptions allowed.

Q. Would it have an effect upon all the tracts within the geological boundaries?

A. There is no question but would have an effect.

Q. And that effect would be the movement of oil and gas from place to place within the reservoir?

A. The result or the effect of the gas drive would be to move the oil down-structure in the lower, to a lower point in the structure.

Q. Now, by the injection of the gas there will be a greater differential created, will there not?

[fol. 1705] A. Should be.

Chairman Bond: The question should be to these tracts.

Mr. Williams: I am referring to the common source of supply, as well.

Chairman Bond: That's improper cross examination, because Counsel asked him particularly as to these tracts.

Mr. Williams: Well, I am leading up to the tracts.

Chairman Bond: Well, ask him about the tracts, use the proper language if you are going to confine it to the tracts, —why can't you on cross-examination direct attention to the tracts.

Mr. Williams: He is not our witness.

Chairman Bond: He is your witness now, on cross-examination, and therefore you must confine your examination to the evidence brought out by Counsel on direct examination,—why can't you ask the question without, "leading up to it", why don't you ask him about the tracts, what effect it would have to those tracts, if they were left out? You can lead up when you are laying a predicate, but when you are proposing to cross-examine a witness, you are confined [fol. 1706] to what was brought out by the other parties, unless you want to make him your own witness.

Q. What effect would the Unit Operation and injection of gas in the reservoir have on the several tracts in the Unit,

including the particular tracts discussion of which you have been interrogated?

Reford Bond Jr.: Now, we object to that.

Chairman Bond: Sustained.

Q. Well, what effect would it have upon these tracts?

Mr. Adams: If the Commission please, we are going to make an objection to the type of question, unless Counsel wants to put into it that this is one common reservoir.

Chairman Bond: He asked him in the beginning,—"assuming that the common source of supply"

Mr. Williams: That's right, that's the assumption.

A. These tracts we are talking about are very far on the edge where the sand pinches out, they are down at the water-oil contact.

Q. Assuming that you had gas in this well, the Phillips-Sunray Dixon, shown on Exhibit 25,—I say, assuming, that you put these, inject gas into that well, it will,—assuming that you put the gas into it near the feather-edge portion where the sand pinches out on the down-structure [fol. 1707] side, near the water-oil contact, that gas will merely serve to put this oil farther down into those areas where there no wells, and I can't see how you would produce it without a well down there to produce it.

Mr. Williams: Now, may I ask this witness some questions to test his——

Chairman Bond: You are entitled to test his credibility and his capacity and his qualifications, but you can't prove anything you want to prove, by saying, "this is testing his credibility,—" you are bound by the rules of evidence.

Q. Now, Mr. Witness, are you,—you have referred to Exhibit 25, on which is shown the Phillips-Garn No. 5 well and which is near the top of the structure?

A. Yes.

Q. And the Phillips-Garn well is shown on Exhibit 25, and is also shown on Exhibit 54-R at the location to which I am now pointing,—is that correct?

A. Yes, in the Southeast of the Southwest of 26-6N-10W.

Q. Now, assuming that this is one common source of supply, and that gas is injected into the Phillips-Garn well

in greater quantities and gas is injected into the gas-cap or is in the gas-cap to the East, would you say that a differential would or would not be created in the top of the structure?

Reford Bond Jr.: Now, you are asking this witness to [fol. 1708] assume something.

Mr. Williams: Yes, this question assumes that it is one common source of supply and that there is gas or oil underlying it. If gas was injected into the Garn well in greater quantities than in the gas that is in the gas-cap a pressure differential would be created, isn't that true?

A. Well,——

Q. And there would be a movement of oil or gas into the other tracts to which you have made reference?

A. Yes.

Q. The gas entering would move to a point of lower pressure?

A. Yes.

Q. And that would cause the gas to migrate across the tracts to which you have made reference?

A. Yes.

Q. And, to that extent, the gas that underlies these tracts would be effected by that movement?

A. Yes.

Q. Now, some of the tracts you refer to are along the lower part of the structure?

A. Tract 33, 50, 1, 2, 67, 68, 69, and 70.

Q. Now, that pressure differential was created along the flank of that structure there and represents the movement of oil as a result of this pressure differential, across the [fol. 1709] tracts to which you made reference and is the result of this pressure differential.

A. That's true, however, the contemplated plan is for the gas to be put in the gas cap, not in the oil zone.

Q. Now, if there is no well on these particular tracts wouldn't the pressure downward ultimately cause that fault to move away from those tracts to a point of lower pressure.

Reford Bond Jr.: Objected to for the reason that the plan doesn't disclose any such method of Unit Operation.

Chairman Bond: He may answer on the assumption of the present drilled wells.

Q. Wouldn't that downward pressure ultimately force the oil from those tracts to other holes now drilled wherein a lower pressure exists?

A. If such condition exists, it would. There is no well down in this low end of the tracts we are talking about,—there is no pressure to cause that oil to go back to some other well. It is just trapped down here.

Q. Good engineering practice would call for the drilling of a well down there, wouldn't it?

A. Yes, it would.

Q. Now, none of the things Counsel has asked you about would have any adverse effect upon any of these tracts, would it?

Mr. Williams: Objected to——

[fol. 1710] Chairman Bond: Overruled, he may answer.

A. The only question that he put to me that would have an adverse effect would be the injecting of gas into some well on this order (indicating point on plat), which would drive the oil into these tracts which are not contemplated in the Plan of Unitization, I understand.

Examination by Mr. Adams:

Q. You mean to inject the gas into the oil zone?

A. Yes.

Q. That isn't contemplated, is it?

A. I understand it is not.

(Reporter's Note: The witness is excused)

[fol. 1711] Mr. Williams: We rest.

TESTIMONY CLOSED AND ARGUMENT AND SUBMISSION OF CASE

Chairman Bond: Do you have any rebuttal, Mr. Adams?

Mr. Adams: No, Your Honor.

Chairman Bond: If you gentlemen desire to argue the case, you may argue it without limitation.

Mr. Williams: I wonder if Counsel around the table might get together and agree to limit the arguments so that we might close today.

Chairman Bond: The Commission will take a short recess and you may see what you can do, but in the other case argument was not limited and the Commission stated that the argument would not be limited in this case,—we'll take a short recess.

(Reporter's Note: After a short recess the argument began and continued until 4:30 o'clock P.M. at which time a recess was had to 10:00 o'clock A.M. on July 25, 1947.)

On July 25, 1947 the Commission is again in Session with all Commissioners present and the parties appeared by Counsel as heretofore stated and the argument was resumed, continued until 12 o'clock Noon, then adjourned to 1:30 P.M. on July 25, 1947, at which last named hour the argument was resumed and continued to it's conclusion [fol. 1712] at 3:00 O'clock P.M., at which time the Chairman announced the case was closed and would be taken under advisement.

[fol. 1713] July 29, 1947, at 10:00 o'clock a.m.

[fol. 1714] Chairman Bond: Gentlemen, you may proceed in C. D. 1308.

Floyd Green: I offer as Exhibit 120 a copy of the amended petition filed by applicants and ask leave to supply that any record at a later date, as Exhibit 121, I would like to offer a copy of the notice issued by the Commission on the 18th of July, 1947, as Exhibit 122, I would like to offer the affidavit of publication to show that the notice issued by the Commission was published in the Daily Law Journal in Oklahoma County for hearing at this time and place.

Chairman Bond: Received.

Mr. Williams: I would like to state in the record and for the Commission that giving the notice of amendment of the petition and the opinion of the applicants was unnecessary but done out of abundance of precaution for the reason that those that did not participate in the hearing would not know of the amendment, the nature of the amendments are very minor and the hearing has already been had, in respect to the amendments to this petition, as a further precaution, we should formally reoffer the evidence, the transcript heretofore taken in the case.

[fols. 1715-1716] Chairman Bond: Any objections: If not, received.

The Commission will recess until 11:00 o'clock.

[fol. 1717] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

Order No. 20289

[Title omitted]

REPORT AND ORDER OF THE COMMISSION—Filed September 5, 1947

The above styled and numbered cause is a proceeding brought by the lessees of a substantial majority of the acreage in the West Cement Medrano oil and gas pool or field located in Caddo County, Oklahoma, seeking to unitize the management, operation and further development of said field for the purpose of preventing the waste of oil and gas and of substantially increasing the ultimate recovery of oil therefrom, all as authorized and provided for in H. B. 339 of the 1945 Oklahoma Legislature. The bringing of this proceeding followed months of cooperative study of the field and of the benefits of unitization engaged in by substantially all of the operating lessees in the pool and in which all were invited to participate. The original petition herein, attached to which was a recommended Plan of Unitization applicable to said field, was filed October 23, 1946.

Pursuant to order of the Commission, said petition was [fol. 1718] first set for hearing November 7, 1946, at 10:00 o'clock, A.M. in the Commission Courtroom in the State Capitol Office Building at Oklahoma City, Oklahoma, and notice thereof published once a week for two consecutive weeks in a newspaper of general circulation in Caddo County, in which West Cement Medrano field is located, and for the same time in a newspaper of general circulation in Oklahoma County, Oklahoma.

At the time and place so fixed for said hearing, a large number of persons were present, not only lessees but also land owners, royalty owners and other persons having varying interests in the West Cement Medrano field. A group of

lessors and royalty owners, represented by their attorney, Reford Bond, Jr., advised the Commission that they had not had sufficient time within which to study the proposed Plan of Unitization and requested a continuance of the hearing. The granting of the continuance was agreed to by the petitioners who, through their attorneys, publicly announced that during the period of the continuance they stood ready and willing, upon request, to furnish any party in interest any factual data pertaining to the West Cement Medrano field and the proposed Plan of Unitization available to petitioners. At the same time Magnolia Petroleum Company, an operating lessee in the field, asked leave to sign the petition as one of the petitioners thereto. Whereupon, the Commission continued said hearing to December 9, 1946, [fol. 1719] at 10:00 o'clock A.M. at the same place, permitted the Magnolia Petroleum Company to sign the petition as one of the petitioners, directed that the petition be refiled and ordered that notice of the refiling of the petition and of the date to which said hearing was continued be published in the same manner and for the same time as was the first notice of hearing, all of which was done.

In advance of said original hearing date, as is its usual custom in oil and gas matters, the Commission mailed mimeographed copies of the petition, together with information as to the time of hearing, to all persons on its established mailing list, which includes all operating lessees within the West Cement Medrano field as well as a number of royalty and other interest owners.

The hearing of said cause was commenced at the time and place so fixed, namely, December 9, 1946, at 10:00 o'clock A.M., in the Commission Courtroom in the Capitol Office Building in Oklahoma City, Oklahoma, and continued at the same place throughout all the following days, to wit: December 9 and 23, 1946; January 6 and 7; February 25, 26, 27 and 28; May 13, 14, 15, 16, 20, 21, 22 and 23; July 15, 16, 17, 18, 22, 23, 24 and 25; all in 1947, except for said first mentioned dates in 1946. The continuance of said hearing from time to time was by proper orders of continuance. At said hearing the petitioners and subscribers [fol. 1720] to the proposed Plan of Unitization were represented by the following named attorneys: W. H. Brown,

Russell G. Lowe, Booth Kellough, W. R. Wallace and R. M. Williams. The protestant, the Palmer Oil Corporation appeared by its attorneys, Mark H. Adams and Charles Jones of Wichita, Kansas. Protestants Tom Potter, Clyde Kahle, Maud Kahle, Bob White Oil and Gas Company and a group of approximately 65 lessors and royalty owners appeared by their attorney, Reford Bond, Jr. The protestants B. E. Johnson, Virginia McIntyre and M. L. McIntyre appeared by their attorney, Jack Page. A number of royalty and other interest owners wrote letters to the Commission urging the granting of the petition, all of which appear in the record. Other royalty owners and various parties in interest were present at the hearing from time to time but took no part.

At the hearing everyone who desired to do so, regardless of the interest of such person, was given full opportunity to offer any and all competent evidence that any such person chose to offer, either for or against the recommended plan of unitization or by way of amendment thereto, and to otherwise be heard in regard thereto. The evidence so introduced consisted of extensive geological, engineering and other proof concerning the history, development, discovery, operation and present condition of the West Cement Medrano field and the probable results obtainable both [fol. 1721] under present competitive methods of operation and through the unitization thereof; proof both pro and con as to the fairness, reasonableness and equitableness of the recommended Plan of Unitization; and proof by protestants with respect to certain amendments which they claim should be made in said Plan.

In addition to the knowledge gained from the evidence introduced at said hearing, the Commission has had, over a period of time, a general knowledge of the West Cement Medrano field and of conditions existing therein gained through the exercise by it of its jurisdiction over such field under the Conservation Laws of the State of Oklahoma, dating from the discovery thereof. As a result of the evidence, statements and arguments introduced and made in the hearing here under consideration, and by reason of its general knowledge of said West Cement Medrano field, as aforesaid, the Commission is of the opinion that it has

sufficient knowledge and information upon which to base a proper order in this cause.

In addition to the proceedings and notices aforesaid, further mention is here made of the fact that during the course of said hearing, The Palmer Oil Corporation drilled and completed an additional well on a lease owned by it in the aforesaid field, necessitating a relatively slight change in the percentage of interests of the several separately owned tracts in the field shown in "Exhibit B" attached [fol. 1722] to the recommended Plan of Unitization, and also necessitating the inclusion of such additional well in "Exhibit D" attached to said Plan of Unitization. Also as a result of the time consumed by the hearing, it was considered desirable by the petitioners and subscribers to the recommended Plan of Unitization to strike from Section XXVII of said Plan the time limitation therein contained. To accomplish the aforesaid objectives, the petitioners during the course of the hearing asked and without objection were granted leave to amend the petition accordingly. In order to permit persons not present at the hearing an additional opportunity to be heard with respect to said amendment, the Commission set the petition as amended for further hearing on July 29, 1947, at 10:00 o'clock, A.M., in the Commission Courtroom in the State Capitol Office Building at Oklahoma City, Oklahoma, and caused notice of the amendment to said petition and of the hearing thereon to be published, ten (10) days prior to said hearing date, in a newspaper of general circulation in Oklahoma County, Oklahoma. At the time and place so named, the further hearing was had in said cause upon the petition as amended, no one appearing, however, in opposition thereto.

Now, on this 5th day of September, 1947, the Commission having previously taken said cause under advisement and having considered the matter in conference and each [fol. 1723] of the Commissioners being well and fully advised, the Commission makes the following findings of fact, conclusions of law, and enters the following order authorizing and approving the creation of the West Cement Medrano Unit, defining of the Unit Area thereof and prescribing of the Plan of Unitization applicable to such Unit and Unit area.

Findings of Fact and Conclusions of Law

The Commission finds:

1. That notice of the filing of the original petition, the refiling thereof after being signed by the Magnolia Petroleum Company, the filing of the amendment thereto and the time, place and purpose of the hearings on the petition, both as originally filed and as amended, was given in all respects as by law required, and that the Commission has jurisdiction of the subject matter of said petition and amended petition and of all persons interested therein, and has jurisdiction to make the promulgate the hereinafter prescribed order.

2. That the lands (hereinafter designated and referred to as the "Unit Area") located in Caddo County, Oklahoma and outlined by the hatched line on the map marked "Exhibit A" and attached to the Plan of Unitization attached to and made a part of this order, are underlaid with an oil and gas-bearing formation known as the Medrano sandstone found at a depth ranging from approximately 4500 feet along the North and Northeast side of the Unit Area [fol. 1724] and an approximate depth of 6241 feet along the South and Southwest side of the Unit Area; that a gas cap exists along the high part of the producing formation from which the primary production is gas, whereas, the primary production from wells drilled lower on the structure is oil; that the average sand or formation thickness in the gas cap area or zone is approximately 65 feet; that the average sand or formation thickness in the oil area or zone is approximately 95 feet; that the said Medrano sandstone underlying said above described lands as aforesaid constitutes a single common source of supply of oil and gas, all parts of which are permeably connected so as to permit the migration of oil or gas or both from one portion of said common source of supply to another wherever and whenever pressure differentials are created as a result of the production or operations for the production of oil or gas from said producing formation; that although faults are known to exist in parts of said common source of supply said faults do not prevent substantial migration of oil and gas and of pressures from one part of said common source of supply to another; that said common source of

supply of oil and gas has heretofore been designated by the Commission and is generally known as the West Cement Medrano Pool.

3. That said common source of supply of oil and gas was first discovered in October, 1936 by the drilling and [fol. 1725] completion of the Magnolia Petroleum Company's Medrano No. 6 gas well in the SE/4 of the NE/4 of the SW/4 of Section 36, Township 6 North, Range 10 West, Caddo County, Oklahoma; that the presence of oil in said common source of supply of oil and gas was first discovered in March, 1943 by the drilling and completion of the Stephens Petroleum Company's Pierson No. 1 oil well in the SE/4 of the SW/4 of the SE/4 of Section 35, Township 6 North, Range 9 West, Caddo County, Oklahoma; that at the present time there are 37 oil wells and 19 gas wells producing from said common source of supply of oil and gas.

4. That the outer boundaries of said common source of supply of oil and gas underlying and by this Order included within the aforesaid Unit Area have been reasonably defined by actual drilling operations, both by the drilling of wells within and the drilling of wells outside said Unit Area; that said Unit Area consists of approximately 3700 acres of land.

5. That the lands embraced within the aforesaid Unit Area are divided into a large number of individual tracts of varying size and shape, and owned in severalty by a large number of different individuals, firms and corporations owning varying interests therein, including oil and gas leasehold interests, royalty interests and various and sundry other rights and interests; that the several oil and gas leases covering said lands are owned by not less [fol. 1726] than 25 different lessees; that the royalty interests under said land are divided among and owned by several hundred royalty owners; that the petitioners in this cause are lessees of record of 73.32% of the area of the common source of supply sought to be unitized; that the subscribers to the recommended Plan of Unitization and other lessees favoring its adoption are lessees of record of approximately 94% of the area of said common source of supply; that the lessees appearing at the hearing and protesting the granting of the petition herein are lessees of

approximately 4% of the proposed Unit Area; that the lessees of the remaining percentage of the unit area have not appeared for or against the granting of the petition herein.

6. That without the unitization of said West Cement Medrano common source of supply of oil and gas the only method whereby said pool can be feasibly and effectively operated and produced for the recovery of oil and gas therefrom is by and under individual competitive pressure depletion methods of operation, the methods now being used in the pool, that is to say, by treating each separately owned tract or lease as a separate unit for operating and production purposes and depending on the natural energy in the producing formation to move what oil and gas can be moved thereby out of the formation to the well bore where it can be produced; that the principal natural energy [fol. 1727] mechanism in said pool is gas in solution with the oil coupled with a gas cap expansion; that under present competitive methods of operation, treating each tract or lease as a separate operating unit, there has been and still continues to be a disproportionate, inequitable and wasteful utilization and dissipation of the gas energy in the pool by certain tracts to the detriment and disadvantage of other tracts and to the injury of the pool as a whole; that by and under the best known competitive pressure depletion methods of operation not more than 25% or approximately 24 million barrels of the 97 million barrels of oil originally in place in the reservoir can be economically recovered, leaving the remaining 75%, or approximately 73 million barrels of oil in the ground unrecovered and recoverable except through and by means of unitization of the pool and the adoption of unitized methods of operation therein; that to permit the owners of gas wells and high gas-oil ratio wells to continue to produce such wells will result in robbing the oil wells of gas energy required to produce the oil; that to shut in the gas wells and the high gas-oil ratio wells without permitting the owners thereof to share in the oil and gas production from the oil wells, would deprive the owners of the gas wells of their fair share of the production from the pool; that the value of the recoverable oil exceeds many times the market value of the gas;

that the return to the reservoir of the gas produced from [fol. 1728] the oil to supplement the remaining natural gas energy and retard the decline in reservoir pressure and perhaps the injection at some later date of water low on structure is desirable and necessary to obtain the greatest ultimate recovery of oil from the pool, but which cannot be done in the absence of unitization because of the migratory nature of the injected gas or water and the effect that the injection thereof into the reservoir would have upon properties in the pool other than the property on which the gas or water is injected and upon the pool as a whole.

7. That by and through the unitization of the proposed Unit Area and the unitized management and operation and further development thereof as a unit, all as set out and provided for in the Plan of Unitization hereto attached, full use can be made of the gas energy in the reservoir to the mutual advantage of all the owners of the said common source of supply of oil and gas, that waste of large volumes of oil and gas can be prevented, gas can and will be returned to the reservoir to supplement the natural reservoir energy, water encroachment, either natural or artificial, on the lower side of the pool can be properly controlled and utilized, substantially more oil, amounting to many millions of barrels, can be recovered from the common source of supply than can be otherwise recovered, a more equitable [fol. 1729] distribution of the recoverable oil and gas can be had as between the several owners of the pool and the correlative rights of the several owners can be more fully protected.

8. The unitization and unitized management and operation and further development of said common source of supply as a unit is reasonably necessary to effectively carry on the unitized methods of operation described in the proposed Plan of Unitization.

9. That any one or all of the unitized methods of operation described in the attached Plan of Unitization as applied to the common source of supply underlying and included within the Unit Area are feasible, will prevent waste, and will, with reasonable probability, result in the increased recovery of substantially more oil and gas from the common source of supply than would otherwise be recovered; that the estimated additional cost of conducting such

operations will not exceed the value of the additional oil and gas so recovered; that such unitization and the adoption of any one or more of such unitized methods of operation is for the common good and will result in the general advantage to the owners of the oil and gas rights in and to the common source of supply thereby affected.

10. That neither said West Cement Medrano common source of supply of oil and gas nor any part or parts thereof [fol. 1730] were being operated by or under pressure maintenance, repressuring or secondary recovery methods of operation as of the effective date of H. B. 339 of the 1945 Oklahoma Legislature.

11. That the Plan of Unitization attached to this order and which is made a part hereof, is one suited to the needs and requirements of the West Cement Medrano Unit, the creation of which is hereby authorized and approved, taking into account all the facts and conditions found by the Commission to exist in respect thereto; that said Plan of Unitization is fair, reasonable and equitable and contains all the terms, provisions, conditions and requirements reasonably necessary and proper to protect, safeguard and adjust the respective rights and obligations of the several persons affected, including royalty owners, owners of overriding royalty interests, oil and gas payments, carried interests, mortgages, lien claimants, and others, as well as the lessees and such as will effectuate and accomplish the purposes of H. B. 339 of the 1945 Oklahoma Legislature; that said plan of unitization provides for the efficient unitized management and control of the further development and operation of the Unit Area for the recovery of oil and gas from the common source of supply affected; that the division of interests set forth in "Exhibit B" attached to said Plan of Unitization pursuant to which the unit production is to be apportioned and allocated among and to the several separately owned [fol. 1731] tracts within the Unit Area is fair and equitable and is such as will reasonably permit persons otherwise entitled to share in or benefit by the production from such separately owned tracts to receive, in lieu thereof, their fair, equitable and reasonable share of the unit production or other benefits thereof; that the division of interest assigned to the several separately owned tracts in the Unit

Area as set out in said "Exhibit B" to said Plan of Unitization is fair and reasonably representative of the value of said several tracts for oil and gas purposes and the contributing value thereof to the unit in relation to like values of other tracts in the unit; that the basis used to arrive at said division of interest takes into account the acreage of the several separately owned tracts, the quantity of oil and gas recoverable therefrom, the location thereof on structure, the probable productivity of oil and gas from such tracts in the absence of unitization, the burden of operation to which such tracts will or are likely to be subjected, together with all other pertinent engineering, geological and operating factors as are reasonably susceptible of determination; that the manner in which and the basis, terms and conditions on which the cost and expense of the further development and operation of the Unit Area shall be financed and apportioned among and assessed against the tracts and interests chargeable therewith are fair, [fol. 1732] reasonable and equitable; that the provisions of the said Plan with respect to taking over and using the wells, equipment and other properties of the several lessees within the Unit Area, including the method of arriving at the compensation therefor and otherwise proportionately equalizing and adjusting the investment of the several lessees in the project as of the effective date of the unit operations are fair, reasonable and equitable; that the provisions of said Plan with respect to the creation of an operating committee and the powers and duties of such committee are fair, reasonable and equitable.

12. That the Plan of Unitization hereto attached in all respects conforms to and complies with the requirements of H. B. 339 of the 1945 Oklahoma Legislature.

13. That the West Cement Medrano pool is a field within the meaning of that term as used in the second paragraph of Section 2 of H. B. 339 of the 1945 Oklahoma Legislature; that the term "field" in ordinary usage has no fixed or definite meaning but is sometimes used to refer to the general area where a number of oil or gas producing formations are found and at other times used to refer to a particular common source of supply or pool; that as used by the Legislature aforesaid, the term was intended to relate

to the particular common source of supply or pool sought to be unitized under the Act and not to any general area [fol. 1733] which in a broader sense could be termed a field; that in effect said Act throughout relates to and deals only with single common sources of supply of oil and gas.

[fol. 1734] Order

It is therefore ordered by the corporation commission of the State of Oklahoma as follows:

1. That the petition filed herein be and the same is hereby granted.

2. That the creation of the West Cement Medrano Unit as prayed in said petition be and the same is hereby authorized and approved.

3. That the Unit area of said unit shall extend to and include all of the West Cement Medrano common source of supply of oil and gas outlined by the hatched lines on the map marked "Exhibit A" attached to the Plan of Unitization attached to this order.

4. That the Plan of Unitization hereto attached and which by reference is made a part of this order is hereby approved and shall constitute the Plan of Unitization of and for said West Cement Medrano Unit and the Unit Area of said Unit, all to the same extent and with the same force and effect as if copies herein in its entirety.

5. Nothing herein contained shall be construed as a waiver by the Commission of any of its powers or authority over the West Cement Medrano Unit or the persons comprising said unit, or the development and operation of the Unit Area thereof under the general Oil and Gas [fol. 1734A] Conservation Laws of the State of Oklahoma, it being expressly recited that the Commission has and retains continuing jurisdiction over the operations carried on by the unit to the same extent that it would have jurisdiction over any other lessee or person producing oil and gas from the West Cement Medrano pool or field in the absence of unitization.

6. The Unit shall from time to time make such reports to the Commission concerning the operation by it of the Unit Area as may be requested by the Commission.

Done and performed by the Corporation Commission at its office in the Capitol Office Building, Oklahoma City, Oklahoma this 5th day of September, 1947.

Corporation Commission of Oklahoma, (S.) Reford Bond, Chairman; (S.) Ray O. Weems, Vice-Chairman; (S.) Ray C. Jones, Commissioner.

Attest: (S.) Tom McMurray, Secretary. (Seal.)

[fol. 1735] EXHIBIT TO PLAN

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EXHIBITS

Exhibit "A": Map of Unit Area
Exhibit "B":
Part I: Percentages of Interest in Unit
Part II: Special Provisions with respect to Allocation of Unit Production
Exhibit "C": Accounting Procedure
Exhibit "D": Table of Well Values

[fol. 1737] PLAN OF UNITIZATION OF WEST CEMENT MEDRANO UNIT

KNOW ALL MEN BY THESE PRESENTS:

The following shall constitute the Plan of Unitization applicable to the West Cement Medrano Unit created pursuant to authority of House Bill 339 of the 1945 Legislature of the State of Oklahoma and having for its purpose the unitized management, operation and further development of the Medrano Sand common source of supply of Oil and Gas underlying the lands outlined by the hatched line on

the map hereto attached and marked "Exhibit A", all to the end that a greater ultimate recovery of Oil and Gas may be had therefrom, waste prevented and the correlative rights of the respective owners protected.

I.

DEFINITIONS

As used in this Plan of Unitization, the following terms and expressions are defined as follows:

(a) "Unit" shall mean the West Cement Medrano Unit.

(b) "Commission" shall mean the Corporation Commission of the State of Oklahoma.

(c) "Person" shall mean any individual, corporation, partnership, common law or statutory trust, association of any kind, the State of Oklahoma or any subdivision or agency thereof acting in a proprietary capacity, guardian, executor, administrator, fiduciary of any kind or any other entity capable of holding an interest in and to the Unit Area.

(d) The pronoun "it" is used to refer to any person regardless of gender.

(e) "Unit Production" shall mean and include all Oil and Gas produced from the Unit Area from and after the Effective Date hereof regardless of the well or tract within the Unit Area from which the same is produced.

(f) "Lessee" shall mean any owner, in whole or in part, of an Oil and Gas lease or any unleased mineral interest, who alone or in association with another per- [fol. 1738] son or persons has the right, except for Plan of Unitization, to explore, develop and operate a Separately Owned Tract for Oil and Gas and in so doing would be personally chargeable with a proportionate part of the cost and expense of the operation thereof. An owner of an overriding royalty interest, oil payment, carried interest, net profit contract, or other oil and gas rights of a similar nature, who is not personally chargeable with the cost and expense of operations, shall not be regarded as a Lessee.

(g) "Unit Operator" shall mean and refer to the Lessee designated to carry on and conduct the Unitized Operations within the Unit Area as provided in Section X hereof.

(h) "Oil and Gas" shall not only refer to oil and gas as such in combination one with the other, but shall have reference to oil, gas, casinghead ~~gas, casinghead~~ gasoline or other hydrocarbons, or any combination or combinations thereof, or any one thereof, which may be found in or produced from the Unit Area.

(i) "Oil and Gas Rights" shall mean and include the right to explore, develop and operate lands within the Unit Area for the production of Oil and Gas, to reduce the same to possession or to share in the production so obtained or the proceeds thereof.

(j) "Effective Date" shall mean the date on which the Unit assumes and takes over the operation of the Unit Area as is provided in Section IX hereof.

(k) "Unit Expense" shall include any and all cost, expense or indebtedness incurred by the Unit or Unit Operator as authorized by this Plan of Unitization or the order of the Commission creating the Unit.

(l) "Unqualified Subscribers" shall mean and refer to those Lessees who sign this Plan of Unitization as Unqualified Subscribers as is provided for in Section XXVII hereof.

(m) "Qualified Subscribers" shall mean and refer to those Lessees who sign this Plan of Unitization as Qualified Subscribers as is provided for in Section XXVII hereof.

II

NAME

The name of the Unit created hereby shall be West Cement Medrano Unit.

[fol. 1739]

III

UNIT AREA

The Unit Area of the Unit shall extend to and include all of the Medrano Sand formation underlying the lands

outlined by the hatched line on the map hereto attached, marked "Exhibit A" and made a part hereof, the same being a single common source of supply of Oil and Gas, located in Caddo County, Oklahoma.

IV

SEPARATELY OWNED TRACTS

Each tract of land within the Unit Area, which by virtue of the ownership thereof in fee, or by common ownership of the Oil and Gas Rights therein or by lease or other agreement among the owners thereof, is presently regarded as a single tract or leasehold estate for the purpose of Oil and Gas development and operation shall be defined, regarded and treated as a Separately Owned Tract within the purview and meaning of this Plan of Unitization. The Separately Owned Tracts as so defined and established are shown on the map hereto attached and marked "Exhibit A" and are for convenient identification numbered thereon and may be referred to by number.

V

GENERAL POWERS OF UNIT

The Unit is authorized and empowered on behalf and for the account of all the Lessees within the Unit Area, without profit to the Unit to supervise, manage and conduct the further development and operation of the Unit Area for the production of Oil and Gas, pursuant to the powers conferred and subject to the limitations imposed by the provisions of House Bill 339 of the 1945 Sesson of the Oklahoma Legislature and by this Plan of Unitization.

VI

EFFECT OF UNITIZATION

The adoption of this Plan of Unitization and the creation of the Unit as herein provided shall have the effect from and after the Effective Date hereof of unitizing all further development and operations for the production of Oil and Gas from the Unit Area and of pooling and unitizing the

production so obtained, all to the same extent as if the Unit Area had been included in a single lease and all rights thereunder owned by the Lessees in undivided inter-
[fol. 1740] ests. Property rights, leases, contracts and all other rights and obligations in respect of the Oil and Gas Rights in and to the several Separately Owned Tracts within the Unit Area are hereby amended and modified to the extent necessary to make the same conform to the provisions and requirements of this Plan of Unitization, but otherwise to remain in full force and effect.

The relationship between the Lessees within the Unit Area, resulting from the creation of the Unit shall not be that of a trust, partnership or association but shall be in the nature of the tenancy in common.

Nothing herein contained shall be construed to require or result in a transfer to or the vesting in the Unit of title to the Separately Owned Tracts within the Unit Area or to the leases thereon, other than the right to use and operate the same to the extent set out in this Plan of Unitization; nor shall the Unit be regarded as owning any of the Unit Production. The Unit Production and the proceeds from the sale thereof shall be owned by the several persons to whom the same is allocated under this Plan of Unitization. All property, real or personal, acquired, held or possessed for use in the operation of the Unit Area shall be the property of the Lessees as their interests may appear under this Plan of Unitization, subject, however, to the rights and powers herein granted the Unit and the Unit Operator.

The amount of the Unit Production allocated to each Separately Owned Tract and only that amount, regardless of the well or wells in the Unit Area from which it may be produced, and regardless of whether it be more or less than the amount of the production from the well or wells, if any, on any such Separately Owned Tract shall, for all intents, uses and purposes, be regarded and considered as production from such Separately Owned Tract.

Operations carried on, under and in accordance with this Plan of Unitization shall be regarded and considered as a fulfillment of and compliance with all the provisions, covenants and conditions, express or implied, of the several oil and gas mining leases upon lands included within the Unit Area, or other contracts pertaining to the develop-

ment thereof, to the same extent that the development and operation of and the production of Oil and Gas from each of the several Separately Owned Tracts within the Unit Area would have constituted a fulfillment of and compliance with such leases and contracts. Wells drilled or operated on any part of the Unit Area, no matter where located, shall for all purposes be regarded as wells drilled on each Separatey Owned Tract within the Unit Area.

[fol. 1741]

VII

Allocation of Unit Production

All Unit Production, except so much thereof as is used in the development and operation of the Unit Area, including repressuring, pressure maintenance and other operations carried on in accordance with this Plan of Unitization, or is unavoidably lost, shall be apportioned among and allocated to the several separately Owned Tracts within the Unit Area in accordance with the percentage and division of interest set forth and shown in Part I of "Exhibit B" hereto attached, subject, however, to the further provisions of Part II of said Exhibit.

Except as may be otherwise authorized or provided in this Plan of Unitization, the Unit Production allocated to each Separately Owned Tract shall be distributed among or the proceeds thereof paid to the several persons entitled to share in the production from such Separately Owned Tract in the same manner, in the same proportions, and upon the same conditions that they would have participated and shared in the production from such Separately Owned Tract, or the proceeds thereof, had not the Unit been organized, and with the same legal force and effect.

Except as may be otherwise authorized or provided in this Plan of Unitization, and provided adequate provisions are made for the receipt thereof, the share of the Unit Production allocated to each Separately Owned Tract shall be delivered in kind to the persons entitled thereto by virtue of ownership of Oil and Gas Rights therein or by purchase from such owners, subject, however, to the right of the Unit Operator to withhold and sell the same in payment of Unit Expense pursuant to this Plan of Unitization, and

subject further to the right of the Unit Operator to take and use such portion of the Unit Production (including residue gas) as may be required for operating purposes, including repressuring, pressure maintenance and any other operation carried on, pursuant to this Plan of Unitization. Persons so entitled to take and receive in kind any portion of the Unit Production shall have the right to construct, maintain and operate within the Unit Area all necessary facilities for that purpose, provided the same are so constructed, maintained and operated as not to interfere with the operations carried on pursuant hereto.

To the extent that any person entitled to take and receive in kind any portion of the Unit Production shall fail to take and receive the same currently as and when produced, the Unit Operator, as agent and for the account and at the expense of such person, is authorized to market and sell or itself purchase, at not less than the market price prevailing at the time of such sale or purchase, the portion of Unit Production not so taken in kind by the person entitled to [fol. 1742] take and receive the same. Proceeds of the Unit Production so sold, or purchased by the Unit Operator, shall be paid by the Unit Operator to the person or persons for whose account the same is so marketed.

The person or persons receiving in kind the Unit Production allocated to any Separately Owned Tract or receiving the proceeds of such Unit Production, if the same is marketed and sold, or purchased by the Unit Operator, shall be responsible for the payment of, and shall indemnify the Unit, the other Lessees and the Unit Operator against any liability for, any and all royalties, overriding royalties, production payments, gross production taxes and any and all other payments and taxes chargeable against or payable out of the Unit Production which is received in kind by, or the proceeds of which are paid to, such person or persons, and neither the Unit nor the Unit Operator shall have any responsibility or liability for payment of such royalties, overriding royalties, production payments, gross production taxes or the other payments or taxes.

If at any time the title or right of any person claiming the right to receive in kind all or any portion of the Unit

Production allocated to a Separately Owned Tract is in dispute or is disapproved by the Operating Committee, the Unit Operator shall at the direction of the Operating Committee either (a) withhold and market, or itself purchase the portion of the Unit Production, title to which is in dispute or is disapproved, and impound the proceeds thereof until such time as the title or right thereto is established, by final judgment of a court of competent jurisdiction or otherwise to the satisfaction of the Unit Operator, whereupon, the proceeds so impounded shall be paid, without interest, to the person or persons rightfully entitled thereto, or (b) may require that the person or persons to whom such Unit Production is delivered, or to whom the proceeds thereof are paid, furnish security for the proper accounting therefor to the rightful owner or owners in the event the title or right of such person or persons shall fail, in whole or in part.

The Unit Operator shall have the right to take and utilize so much of the Unit Production as may be necessary or desirable in the development and operation of the Unit Area, including but without being limited to, the use of gas (including residue gas) for repressuring, pressure maintenance or other operations carried on in accordance with this Plan of Unitization. No royalties, overriding royalties, production payments or other payments shall be payable upon or with respect to that portion of the Unit Production so taken and utilized by the Unit Operator or which may be lost in handling or otherwise without want of due diligence on the part of the Unit Operator.

[fol. 1743]

VIII

Operating Committee

An Operating Committee is hereby created to consist of one representative to be designated by each Lessee within the Unit Area, provided that an individual Lessee may himself be a member of the Committee. Such designation shall be in writing and with respect to the representative to participate at the organization meeting of the Committee shall be presented at such meeting, or if thereafter made, shall be filed with the Secretary of the Operat-

ing Committee. Any such Lessee may in like manner (a) designate an alternate representative on the Operating Committee, who, in the absence of the Lessee or its regular representative, shall have the same full right and power to represent the interest of such Lessee, or (b) may from time to time discharge any such regular or alternate representative and designate a new representative to act for such Lessee on the Operating Committee.

The Operating Committee shall have the general overall management and control of the Unit and the conduct of its business and affairs and the operations carried on by it, and is authorized and empowered, subject to the terms and provisions hereof, to do all things necessary, proper and convenient for carrying out the terms and spirit of this Plan of Unitization and to that end, not excluding or limiting any other power or powers that may be necessary or proper for that purpose, shall have the following specific powers and duties:

(a) To adopt rules and regulations for the proper functioning of the Operating Committee, including such matters as the time and places of holding meetings, the calling thereof or the manner of taking the vote on any question all in a manner not inconsistent with the express requirements of this Plan of Unitization.

(b) To remove any Unit Operator.

(c) To select a successor to any Unit Operator.

(d) To determine the extent of drilling operations and development to be carried on by the Unit Operator, including the approval or disapproval of the contemplated drilling, deepening, plugging back, reconditioning, abandonment or the use to be made of any well or wells.

(e) To pass upon and approve or disapprove all costs and estimates of costs and any proposed expenditure by the Unit Operator; provided, that the Committee may permit without prior approval by it the [fol. 1744] incurring of normal operating expense and any proposed expenditure by the Unit Operator of not more than Five Thousand ($5,000.00) Dollars; and provided further that the approval by the Operating

Committee of the drilling of any well or wells or carrying out any specific project of development or operation shall mean and include the approval of all necessary expenditures in drilling, completing and equipping such well or wells or carrying out such project.

(f) To determine from time to time the rate at which and the wells from which the Unit Production shall be produced in conformity with good engineering practices and any applicable conservation laws or regulations.

(g) To pass upon, approve or disapprove the purchase, sale or other disposal of materials and equipment by the Unit Operator otherwise than in the normal course of approved operations.

(h) To approve and authorize the purchase, construction, location, abandonment, sale or other disposal of any compressor plant, gasoline plant, tank batteries, salt water disposal system or other facilities serving the Unit Area.

(i) To determine the manner in which, the location at which and the extent to which gas can best and should be injected into the reservoir to accomplish the Plan of Operation set forth in Section XV hereof.

(j) To provide for the proper auditing of the accounts of the Unit Operator with respect to the operation and development of the Unit Area.

(k) To appoint such sub-committees as it may deem proper and requisite, as for example, an advisory committee, legal committee, engineering committee, plant committee, geological committee and tax committee to act under the authority and subject to the control of the Operating Committee consonant with the terms of this Plan of Unitization.

(l) To approve or disapprove any proposed plan of development or operation or amendment thereof required to be submitted to any regulatory body having jurisdiction of the subject matter thereof.

(m) To approve or disapprove any proposed expenditures for expert technical advice, including any [fol. 1745] extra services rendered by the Unit Operator's technical staff, not contemplated by the provi-

sions of the accounting procedure hereto attached, marked "Exhibit C" and not covered by the overhead charges therein authorized, which overhead charges in said accounting procedure are intended to cover only normal lease development and lease operations.

(n) To direct and consult with the Unit Operator in all matters pertaining to the duties and functions of the Unit Operator.

(o) To provide for the finances in the manner herein provided for the carrying on of the Unit Operations hereunder.

Each Lessee within the Unit Area who is represented on the Operating Committee shall have a vote equal to the proportionate interest of said Lessee in the Unit determined as follows:

(a) In respect of each Separately Owned Tract, the Lessee or Lessees thereof shall have a vote equal to the percentage indicated opposite such Separately Owned Tract in Part I of "Exhibit B" hereto attached.

(b) Should there be more than one Lessee of a Separately Owned Tract, the vote in respect thereof shall be divided between such Lessees in proportion as such Lessees share in the Unit Expense chargeable to such tract.

(c) The vote of a Lessee having an interest in more than one Separately Owned Tract shall be the sum total of the votes of such Lessee in respect of all such tracts.

In all matters except the removal of a Unit Operator the vote on behalf of Lessees having at least 66⅔% of the total voting interest in the Unit shall control.

A Unit Operator may be removed only by the vote of at least 75% in interest of the Lessees other than such Unit Operator.

If at any time the voting interest of a Lessee should be such as to control the action taken by the Committee, the vote of such Lessee shall not serve to carry or defeat action taken by the Committee unless such vote is supported by the vote of a majority in interest of the remaining Lessees.

[fol. 1746] Minutes shall be made of all meetings of the Operating Committee and kept as a part of the permanent records of the Unit. Such minutes need not be a verbatim record of all the proceedings, but shall show and reflect (a) the names of all members present at the meeting; (b) all motions and resolutions offered or acted upon, together with the result of such action; and (c) such other formal action as may be taken by the Committee. A copy of the minutes of each such meeting shall be mailed to each member of the Committee within a reasonable time after the meeting.

Notices or other communications addressed and sent to the Unit or to the Operating Committee by United States mail or telegraph in care of the Unit Operator shall be deemed to have been properly given to or served upon the Operating Committee. The Unit Operator shall promptly deliver all such notices or communications to the Chairman or Secretary of the Operating Committee.

IX

Organization of Unit and Effective Date of Plan

Subject to call by Lessees of record owning 50% or more in interest in and to the Unit as shown in Part I of "Exhibit B" hereto attached the representatives designated by the several Lessees to serve on the Operating Committee shall meet at some convenient place to perfect the organization of the Operating Committee. Such meeting may be held at any time after twenty (20) days from the date of the order of the Commission approving this Plan of Unitization. Notice of the time and place of said meeting shall be mailed at least ten (10) days prior thereto to all Lessees within the Unit Area whose names and addresses are known to the Lessees calling said meeting, as well as those Lessees who shall have within ten (10) days from the date of said order notified the Secretary of the Commission in writing of their desire to be so notified of the meeting. Any Lessee within the Unit Area desiring notice of such meeting may file a statement of such desire with the Secretary of the Commission, giving its name and the address to which it desires the notice to be sent.

The Operating Committee shall organize by selecting a Chairman, a Vice-Chairman, a Secretary and such other officers as to the Committee may seem proper. The Chairman and Vice-Chairman shall be selected from among the members of the Operating Committee. The Secretary and other officers may or may not be members of the Committee. The Chairman shall preside at all meetings of the Operating Committee when he is present and shall be the Chief Executive Officer of the Unit. The Vice-Chairman shall perform all duties of the Chairman in the absence of the Chairman. The Secretary shall keep and maintain all [fol. 1747] the records of the Committee and shall also be Secretary of the Unit. Such officers shall serve at the will of the Operating Committee and perform such other duties as are delegated to them by the Operating Committee.

Upon completion of its organization, the Operating Committee shall proceed to make plans and preparations and take such steps as are necessary for the taking over of the unitized operations and further development of the Unit Area by the Unit, and shall in advance thereof fix the time when the Unit will take over such operation and development, and give the Lessees within the Unit Area reasonable notice thereof. The time so fixed shall not be less than sixty-one (61) days after the entry of the order of the Commission approving this Plan of Unitization nor more than three months after the time when said order shall have become final.

The time when the Unit takes over the operation and further development of the Unit Area shall be the Effective Date of this Plan of Unitization.

In the event the Unit shall fail to assume and take over the operation of the Unit Area on or before three (3) months after the time when the order of the Commission approving this Plan of Unitization shall have become final, then and in that event the Unit shall, without further action on the part of the Operating Committee or the Commission, be dissolved and all rights and obligations under this Plan of Unitization shall be at an end, except that any and all costs and expense incurred by the Unit incident to its organization or preparatory to the taking over of the operation of the Unit Area shall be borne and paid for by the

Lessees whose representatives on the Operating Committee by their vote authorized the incurring of such expense, in proportion as the interest of each such Lessee in and to the Unit as set out in Part I of "Exhibit B" bears to the total interest of all such Lessees in and to the Unit as shown on said Part I of "Exhibit B". In the event the Unit assumes and takes over the operation of the Unit Area within the time so named, this Plan of Unitization shall thereafter remain in force and effect until such time as the Unit is dissolved and abandoned as provided in Section XXV hereof.

The order of the Commission approving this Plan of Unitization shall be regarded as having become final at the end of the time allowed by law for any appeal therefrom, if no appeal is taken, or, if an appeal is taken, then upon the final determination of any such appeal.

The Unit on or before five (5) days after the Effective Date hereof shall submit to the County Clerk of Caddo County, Oklahoma, for filing, a written declaration signed by the Chairman and Secretary of the Operating Committee, setting forth

(a) The hour, day and year on which the Unit took over the operation of the Unit Area;

[fol. 1748] (b) A description or plat of the lands included within the Unit Area; and

(c) The cause number and date of the Commission order approving this Plan of Unitization, with an appropriate reference to such order and the files of the Commission for further information concerning this Plan of Unitization.

X

Unit Operator

Subject to the further provisions of this Plan of Unitization, operations in connection with the development and the operation of the Unit Area for Oil and Gas shall be carried on and conducted by a Unit Operator in accordance with the instructions of the Operating Committee.

The Unit Operator shall:

(a) Conduct all such operations in a good and workmanlike manner.

(b) Keep full, true and correct books, accounts and records of its operations hereunder which shall be made available for inspection at all reasonable times by any of the Lessees within the Unit Area.

(c) Mail to each Lessee on or before the 10th day of each calendar month a full, true and correct statement of all Unit Production during the preceding calendar month.

(d) Comply, to the extent of its operations within the Unit Area, with the Workmen's Compensation Laws of the State of Oklahoma and with all other valid and applicable federal and state laws and regulations.

(e) Carry such insurance as may be required by the Operating Committee.

(f) Keep the land and leases within the Unit Area free from liens and encumbrances occasioned by the operations of the Unit Operator save only the lien granted the Unit and the Unit Operator under this Plan of Unitization.

[fol. 1749] The Operating Committee may by the vote hereinbefore provided remove a Unit Operator at any time. A Unit Operator may resign only after giving the Operating Committee six months' written notice of its intention to resign, or sooner if a successor is selected and has assumed the duties of Unit Operator prior to the end of such time. Upon the removal or resignation of a Unit Operator the Operating Committee shall designate a successor Unit Operator from among the Lessees within the Unit Area.

Phillips Petroleum Company is hereby designated as Unit Operator.

XI

Unit Expense

The Unit Operator in the first instance shall pay and discharge all cost and expense incurred in the development

and operation of the Unit Area and in the conduct of the activities and affairs of the Unit. All such cost and expense incurred in the development and operation of the Unit Area shall be in accordance with the Accounting Procedure hereto attached, marked "Exhibit C" and made a part hereof. All other costs and expense shall be only such sums as are approved by the Operating Committee.

All such Unit Expense as it accrues shall be charged to the several Separately Owned Tracts in the Unit Area in proportion to the percentage of interest of such tracts in and to the Unit as set forth and shown in Part I of "Exhibit B" hereto attached.

Except as may be otherwise hereinafter specifically provided, a Lessee or Lessees obligated or responsible for the cost and expenses of operating a Separately Owned Tract for Oil and Gas in the absence of unitization shall, in the same proportion and to the same extent, be chargeable with and responsible for the payment of the Unit Expense charged against such Separately Owned Tract.

The Unit Operator shall on or before the last day of each calendar month render to each Lessee within the Unit Area an itemized statement of all charges and credits during the preceding month and of the amount due from or to each Lessee with respect to each Separately Owned Tract. If the Unit Operator so elects, such statement of account may also include a charge by way of an advance of the proportionate part of the estimated Unit Expense for the ensuing month chargeable to the Lessee against whom such statement is rendered, using as a basis therefor the budget hereinafter provided for. Except as may be otherwise provided herein, each Lessee chargeable with the payment [fol. 1750] hereof shall, within fifteen (15) days from the receipt of such statement, pay to the Unit Operator the amount thereof. If not paid when due, the unpaid balance shall bear interest at the rate of 6% per annum until paid. Payment of any such statement shall not prejudice the right of any Lessee to protest or question the correctness thereof; provided, the Unit Operator shall not be required to adjust any item of charge or credit unless a claim therefor has been presented in writing within six (6) months after the approval by the Operating Committee of the annual audit for the period in which the charge or credit was made.

Before or as soon as practical after the Effective Date hereof, the Operating Committee, acting in conjunction with the Unit Operator, shall prepare a budget of estimated Unit Expense for the remainder of the calendar year and on or before the first day of each December thereafter shall prepare a budget of estimated Unit Expense for the ensuing calendar year, which budgets shall set forth the estimated Unit Expense by quarterly periods. Unless otherwise specified in the budget, it shall be presumed for the purpose of advance billings as aforesaid, that the estimated Unit Expense for each month of a quarterly period shall be one-third (⅓) of the estimate for the quarterly period. Budgets so prepared shall be estimates only and shall be subject to adjustment and correction by the Operating Committee and Unit Operator from time to time whenever it shall appear that an adjustment or correction is proper. A copy of each such budget and adjusted budget shall be promptly furnished each Lessee within the Unit Area.

Any Lessee, other than an Unqualified Subscriber, who does not elect to pay its proportionate share of the Unit Expense, shall not be personally obligated for the payment thereof, but the amount thereof or such portion thereof as such Lessee shall elect not to pay, together with interest thereon at the rate of 6% per annum, shall be carried and shall be payable, so far as such Lessee is concerned, as follows:

(a) So much of said charge as is made up of current operating costs, as distinguished from items of investment, together with interest thereon, shall be payable out of proceeds from all Unit Production to the credit of the interest or interests chargeable therewith.

(b) So much of said charge as is made up of items of investment, together with interest thereon, shall be payable out of 50% of the net proceeds of the Unit Production to the credit of the interest or interests chargeable therewith after deducting the charge for Operating costs under subparagraph (a) last above.

[fol. 1754] (c) All credits to any such Lessee on account of the sale or other disposal of surplus material or equipment or otherwise shall be applied against any such unpaid Unit Expense charged against such Lessee.

Amounts so carried as aforesaid, shall be billed to and paid by the Lessees who sign this Plan of Unitization as Unqualified Subscribers, in the proportion that the interest of each in the Unit bears to the total interests in the Unit of all of the Unqualified Subscribers to this Plan of Unitization, Lessees so paying the same shall be reimbursed therefor, together with interest thereon, as and when the amounts so carried and the interest thereon are collected from the Lessees or interests primarily chargeable therewith.

The Unit shall have a first and prior lien upon the leasehold interest (exclusive of a 1/8 royalty interest) in and to each Separately Owned Tract, the interest of the owners thereof in and to the Unit Production and all equipment in possession of the Unit, to secure the payment of the Unit Expense and other items of cost charged to and against such Separately Owned Tract, provided such lien may be enforced as against overriding royalty, oil and gas payments, royalty interests in excess of a 1/8 of the production, or other interests which otherwise are not chargeable with such costs, only in the event the owner of the interest or interests primarily responsible fails to pay such Unit Expense when due, and the production to the credit thereof is insufficient for that purpose. In the event the owner of any royalty interest, overriding royalty, oil and gas payment or other interest which under the Plan of Utilization is not primarily responsible therefor pays any part of such Unit Expense for the purpose of protecting such interest or the amount of such Unit Expense in whole or in part is deducted from the Unit Production to the credit of such interest, the owner thereof shall, to the extent of such payment or deduction, be subrogated to all of the rights of the Unit and of the Unit Operator with respect to the interest or interests primarily chargeable with such Unit Expense. A one-eighth (1/8) part of the Unit Production allocated to each Separately Owned Tract shall in all events be regarded as royalty to be distributed to and among or the proceeds thereof paid to the royalty owners free and clear of all Unit Expense and free of any lien therefor. The lien hereinabove provided for shall be for the use, benefit and protection of Unit Operator or other Lessees or persons entitled to receive or share in the monies, the payment of which is secured thereby, and in the event of failure of the Unit to

enforce such lien, the Unit Operator or other person entitled to the benefit thereof, shall be subrogated to the lien rights of the Unit, including the right of foreclosure.

In the event of a failure of any Lessee to pay its share of the Unit Expense when due, and also in the case of a Lessee who elects to be carried as aforesaid; the Unit Operator shall be entitled to take and market, or itself purchase the Unit Production to the credit of such Lessee or to the credit of the interest or interests chargeable with such Unit Expense, or to otherwise collect and receive the proceeds from the sale thereof, and shall apply all such sums so collected against the delinquent or unpaid Unit Expense due from such Lessee or interest, the balance of such proceeds, if any, to be paid to the Lessee or other person entitled thereto. The Unit Operator may likewise take any other credit due any such Lessee or interest and apply the same [fol. 1752] against sums due from such Lessee or interest for Unit Expense.

Any and all income and credits received by Unit Operator on account of Unit Operations hereunder, from whatever source received, shall currently be accounted for and credited to the Lessees or interests entitled to credit therefor.

XII

Initial Adjustment of Investment

Upon the Effective Date hereof the Unit shall assume control and management of the further development and operation of the Unit Area and, except as may be otherwise herein provided, each Lessee within the Unit Area shall deliver possession to the Unit Operator of (a) all wells within the Unit Area, (b) all lease and other operating equipment used in the operation of such wells, and (c) all production and well records and other pertinent data pertaining thereto.

(1) Completed Wells

All wells which as of the Effective Date are completed as producing wells in the Medrano Sand shall be taken over by the Unit, except that in the case of wells determined by the Operating Committee to be unnecessary to Unit opera-

tions, the owners thereof may upon request retain possession thereof for the purpose of completing the same in some other formation not a part of the Unit Area, provided, the owners thereof shall immediately cause the Medrano Sand to be sealed off in a manner satisfactory to the Operating Committee.

(2) Wells Being Drilled or Reconditioned

Any well being drilled, repaired, deepened or plugged back to the Medrano Sand as of the Effective Date hereof may be completed by the separate owner or owners thereof and if so completed as a producing well in the Medrano Sand, shall be taken over by the Unit except that in the case of wells determined by the Operating Committee to be unnecessary to Unit Operation, the possession thereof may be retained by the owners thereof under the circumstances and upon the conditions named in (1) last above.

(3) Casing, Tubing and Wellhead Connections

All casing, one string of tubing and wellhead connections in or on wells taken over by the Unit shall be treated and regarded as a part of such wells.

(4) Lease and Operating Equipment

As of the Effective Date hereof the Operating Committee shall determine what part of the lease and other operating equipment (exclusive of warehouses, lease houses, camps and office buildings) used in the operation of wells taken over by the Unit it considers necessary or desirable to take over and use in connection with the unitized development and operation of the Unit Area including, by way of example but not thereby excluding, other equipment of a like or different kind, derricks, tank batteries, separators, [fol. 1753] rods, pumps, tubing in excess of one string, flow lines, water lines, gas lines, etc., which said lease and operating equipment (exclusive of warehouses, lease houses, camps and office buildings) shall be delivered to and taken over by the Unit. All lease and operating equipment not so taken over shall remain the separate property of the several owners thereof and may be used by said separate owners in the operation of wells producing from formations

other than the Medrano Sand or reclaimer as such separate owners may desire. The acquisition of existing warehouses, lease houses, camps, or office buildings considered desirable to the operation and development of the Unit Area shall be by negotiation and separate contract of purchase with the owner or owners of such warehouses, lease houses, camps and office buildings.

(5) Adjustment of Well Investment

(a) Each Separately Owned Tract on which is one or more wells taken over by the Unit shall be given credit for the value assigned to such well or wells as follows: wells listed in "Exhibit D" hereto attached shall have the assigned value therein shown; wells not listed in "Exhibit D" shall be assigned a value determined in the same manner as well used in determining the values assigned to the wells listed in "Exhibit D."

(b) Each Separately Owned Tract within the Unit Area shall thereupon be charged with the total value of all such wells in proportion to such tract's percentage of interest in and to the Unit as shown in Part I of "Exhibit B" hereto attached, less the amount of the credit due such tract under (a) last above, resulting in either a net debit or a net credit with respect to each Separately Owned Tract.

(c) The amount of any net debit chargeable against a Separately Owned Tract under (b) above shall be payable by the Lessee or Lessees of such tract out of 10% of 7/8 of the Unit Production of oil allocated to such tract if such tract has a credit under (a) above, or 25% of 7/8 of said oil if said tract has no credit under (a) above. The oil applicable to the oil payment with respect to each Separately Owned Tract having a net debit shall be sold by the Unit Operator, at not less than the prevailing market price, for the account of the Lessees of Separately Owned Tracts having net credits under (b) above until such time as the accumulated proceeds thereof equal the amount of such net debit. The Lessee or Lessees of each Separately Owned Tract having a net debit shall have the right to designate the purchaser to whom said oil shall be sold, provided the purchaser so designated will take and purchase said oil

at the prevailing market price. Amounts collected by the Unit Operator under the provisions of this paragraph shall be paid by said Unit Operator to the Lessees of Separately Owned Tracts having net credits under (b) above in proportion to the percentages which the net credit due each bears to the net credit due all such Lessees. The amounts of the debits and credits under (a) and (b) above in respect to Separately Owned Tracts held by the same Lessee may, at the option of such Lessee, be grouped for the purpose of arriving at a combined net debit for all such tracts payable out of such fraction of 7/8 of the Unit Production of oil allocated to all such tracts as will result in the application of the same amount of oil each month to the payment of said combined net debit as would have been applied to the payment of the separate net debits against said several tracts in the absence of such grouping.

[fol. 1754] (6) Accounting for Lease and Operating Equipment

An accounting for the lease and operating equipment so transferred to and taken over by the Unit shall be had as between the owners thereof, and all Lessees within the Unit Area on the basis of the value thereof determined in accordance with Section IV of the accounting procedure hereto attached marked "Exhibit C", plus a reasonable allowance for the cost of installation, if installed, to be determined by the Operating Committee, and proper charges and credits entered against the several Separately Owned Tracts, all to the end that on and after the Effective Date hereof each of the several Lessees within the Unit Area instead of separately owning the equipment delivered to the Unit by such Lessees, will have exchanged the same for an undivided interest in and to all the equipment so taken over and acquired by the Unit and will have paid or have been paid, as the case may be, for any difference in value. The amount of any net charge made against a Separately Owned Tract under this paragraph shall be treated and regarded in all respects the same as any other charge for Unit Expense chargeable to such tract.

XIII

Oil in Lease Tankage as of Effective Date

A proper and timely gauge shall be made of all lease or other tanks taken over by the Unit to ascertain the amount of oil in such tanks at the time the Unit assumes and takes over the development and operation of the Unit Area. So much of such oil as is legally produced shall remain and be the property of the parties entitled thereto had not the Unit been created, and upon request, shall be delivered in kind to persons entitled thereto, or in the absence of such request, shall be sold by the Unit Operator for the credit of such persons at not less than the prevailing market price and the proceeds thereof paid to such persons.

XIV

Settlement with Respect to Gas Produced and Underproduction of Gas Prior to Effective Date

A settlement with respect to gas produced and underproduction of gas prior to the Effective Date shall be made as follows:

[fol. 1755] (a) Each Separately Owned Tract having underproduction to its credit as of the Effective Date shall be given credit for such underproduction, less so much thereof as may have accumulated between November 1, 1946, and the Effective Date, on the basis of 95% of what the Lessee or Lessees of each such tract would have received and been paid therefor, less seller's cost of dehydration, had said gas been produced and sold currently during the period or periods in which such underproduction accumulated.

(b) Each Separately Owned Tract shall be charged with the sales of gas from such tract during the four months' period from November 1, 1945, to March 1, 1946, plus any overproduction charged against such tract as of the Effective Date other than overproduction as may have accumulated during said four months' period, on the basis of 7/8 of 95% of the average

price, less seller's cost of dehydration, received for gas sold from such tract during said four months' period from November 1, 1945 to March 1, 1946.

(c) Unit Operator shall pay to the Lessee or Lessees of each Separately Owned Tract having a net credit after deducting the amount of the charge under (b) from the credit under (a) the amount of such net credit.

(d) The Lessee or Lessees of each Separately Owned Tract against which there is a net charge after deducting the amount of the credit under (a) from the amount of the charge under (b) shall be charged with and shall pay to the Unit Operator the amount of said net charge in the same manner and on the same terms and conditions as if said net charge was a charge for Unit Expense against such Separately Owned Tract.

(e) If the amounts collected under (d) are less than the amounts paid under (c) the difference shall be charged against the several Separately Owned Tracts within the Unit Area in proportion to their respective percentages of interest as set out in Part I of Exhibit B hereof as an item of Unit Expense. If the amounts collected under (d) are more than the amount paid out under (c), the difference shall be credited to the several Separately Owned Tracts and paid to the Lessees thereof in proportion to the percentages of interest of such tracts as set out in Part I of Exhibit B hereof.

(f) The amounts credited to each Separately Owned Tract and paid to the Lessee or Lessees thereof under (c) and (e) shall be distributed and paid by such Lessee or Lessees to the owners of the Oil and Gas Rights in and to such tract, including the Royalty Owners, in the same proportion and to the same extent that they share in the Unit Production allocated to such tract as of the Effective Date hereof.

[fol. 1756] (g) The underproduction and overproduction of gas and the amount of sales of gas from any Separately Owned Tract at any time or during any period shall be determined from the books and records of the Commission.

XV

Plan of Operation

To the end that the quantity of Oil and Gas ultimately recoverable from the Unit Area may be substantially increased and waste prevented, the further development and operation of the Unit Area, from and after the Effective Date hereof, shall be conducted by the application to the Unit Area of the following unitized method of operation:

(a) As soon as practical after the Effective Date hereof, the Unit shall make the necessary preparations therefor and with diligence and in accordance with good engineering and production practices engage in pressure maintenance or repressuring operations through the return of gas to the reservoir to the extent and in the manner best calculated to efficiently and without waste result in the greatest ultimate recovery of Oil and Gas from the Unit Area. In so doing, the Unit is authorized to construct, purchase or otherwise acquire and operate such gasoline plants, processing plants or compressor plants and other facilities as may in the best judgment of the Operating Committee be desirable for that purpose, or is authorized, should it so elect, to contract with the owners of an individually owned plant or plants and facilities to render in whole or in part the desired services in connection therewith.

(b) The oil produced from the Unit Area shall be produced from those wells in the Unit Area from which the same can be obtained with the smallest loss or dissipation of reservoir energy reasonably possible under practical operating conditions as they may exist from time to time.

(c) Gas wells and wells which produce oil with gas-oil ratios found to be excessive in relation to the gas-oil ratios of other wells producing oil from the Unit Area shall be shut in or the production therefrom restricted in such manner as to make the most effective utilization of the gas energy of the reservoir reasonably possible under practical operating conditions as they may exist from time to time.

(d) Production of Oil and Gas from different parts of the Unit Area shall be regulated in such manner as to retard, control or effectively utilize water encroachment, in such manner and to such extent as may be found reasonably possible and economically advisable from time to time.

(e) Gas (other than gas produced in connection with the production of oil) shall be produced from the Unit [fol. 1757] Area only at such time or times and in such manner as in the judgment of the Operating Committee such gas may be produced without materially decreasing the quantity of oil economically recoverable from the Unit Area.

(f) Such other unitized method or methods of operation as may from time to time be determined by the Operating Committee to be feasible, necessary or desirable to efficiently and substantially increase the ultimate recovery of Oil and Gas from the Unit Area, provided the estimated additional cost thereof does not exceed the value of the additional Oil and Gas to be so recovered.

Nothing herein contained shall prevent the Unit from abandoning or changing in whole or in part any particular method or methods of operation, including the pressure maintenance or repressuring operations required under (a) above, if and in the event, at such time, and to the extent that any such method of operation as applied to the Unit Area is, in the best judgment of the Operating Committee, no longer in accord with good engineering or production practices.

XVI

Right to Information Regarding Unit Operations

Each and all Lessees within the Unit Area shall have access to the entire Unit Area at all reasonable times to inspect and observe operations of every kind and character on the property, and shall have access at all reasonable times to any and all information pertaining to wells drilled, production secured, marketing of Unit Production and to the books, records and vouchers relating to the operation

of the Unit Area. Unit Operator shall, upon request, furnish to any such lessee tank tables, daily gauge and run tickets and reports of stock on hand at the first of each month and any other pertinent information pertaining to the Unit Area or development and operation thereof. All of the rights herein granted shall apply with equal force to the construction and operation by the Unit of any repressuring or pressure maintenance plant or other facilities in connection therewith.

XVII

Liability

No member of the Operating Committee or any other committee shall be personally liable or individually responsible for any act, error, default or omission as a member of such committee or committees.

Neither the Unit nor the Unit Operator shall be liable or responsible under any of the provisions of this Plan of [fol. 1758] Unitization for any acts or omissions resulting from causes beyond the control of the Unit or such Unit Operator, or other causes which by the exercise of due diligence could not have been prevented or overcome.

Unit Operator shall not be liable or responsible for any damage to the Unit Area or the property, equipment or facilities used in the development and operation thereof, or for the loss of any production arising out of its operation of the Unit Area, except only for bad faith or gross negligence in connection therewith.

If and in the event, notwithstanding the foregoing provisions of this section, the Unit, the Unit Operator or any member of the Operating Committee is held liable by a court of competent jurisdiction for any matter or thing for which it is herein provided the Unit or person so named shall not be liable, the amount of such liability as finally determined shall thereupon be treated, regarded and paid as an item of Unit Expense.

XVIII

Change of Interest

All transfers, assignments and conveyances of any interest in, or with respect to, any of the Separately Owned

Tracts within the Unit Area shall be subject to the terms, provisions and conditions of this Plan of Unitization, but shall not be binding on the Unit or the Unit Operator unless and until a photostatic or certified copy of the recorded instrument evidencing such change of ownership has been delivered to the Unit Operator. Each such transfer, assignment or conveyance, whether so stating or not, shall operate to impose upon the person or persons acquiring such interest the obligation of the assignor or grantor with respect to the interest so transferred and shall likewise operate to give and grant to the person or persons acquiring such interest all benefit attributable hereunder to such interest.

XIX

Audits

The Operating Committee shall cause an audit to be made of the books, accounts and records of the Unit Operator in respect to matters pertaining to the Unit and the operation of the Unit Area at least once each year and shall furnish a copy thereof to each of the Lessees within the Unit Area. Each such audit shall cover the period intervening since the last audit. The audit may be made by an [fol. 1759] auditor or auditing committee from the accounting staff of one or more of the Lessees within the Unit Area, or by an independent auditor or auditors employed by the Unit to make such audit.

XX

Rights of Way

The Unit shall have a servitude and right of way on, over and across all of the lands in the Unit Area for the purpose of laying, constructing, building, using and maintaining, operating, changing, repairing and removing pipe lines, tanks, telegraph and telephone lines, water lines, and other facilities for the development and operation of the Unit Area for Oil and Gas and for the gathering, handling and disposal of the Unit Production; provided, the Unit shall pay all damages to growing crops, timber, fences, improvements and structures on the land resulting from the exercise of the rights and privileges granted to it in this section.

XXI

Claims, Suits and Judgments Against Individual Owners of Unit Area

In the event claim is made against any of the owners of the Unit Area or any of such owners are sued on account of any matter or thing growing out of the development and operation of the Unit Area by the Unit and over which such owner or owners have no control because of the rights, powers and duties herein granted the Unit, said owner or owners shall immediately notify the Operating Committee in writing of such claim or suit. The Operating Committee shall assume and take over the further handling of such claim or suit and in pursuance thereof may select an attorney or attorneys for that purpose, who, subject to the directions of the Operating Committee, shall have the exclusive right to direct and control the settlement or defense thereof. Should such claim be settled, final judgment be entered against any such defendant or defendants upon said cause of action and any such defendant is required to pay or satisfy such judgment or expense of litigation in whole or in part, the amount of such settlement or judgment shall be treated, regarded and paid as any other item of Unit Expense. Nothing herein contained shall apply to or relieve any such owner or owners of liability which may have accrued prior to the effective date of this Plan of Unitization.

XXII

Title Information

Upon request of either the Operating Committee or the Unit Operator, the Lessees of the several Separately Owned [fol. 1760] Tracts shall furnish and make available to the Unit or the Unit Operator, as the case may be, an abstract brought to the date of the request, together with all other title information in the possession and files of such Lessees, title opinions, original or true copies of all leases, assignments, contracts, curative matter and all other data and information pertaining to or otherwise affecting titles to the Oil and Gas Rights in and to the Unit Area.

XXIII

Other Formations

It is understood that the common source of supply described herein as the Unit Area, namely, the Medrano Sand of the West Cement Field, underlies and may overlie other reservoirs or common sources of supply of Oil and Gas not a part of the aforesaid Medrano Sand or a part of the Unit Area of the Unit created hereby. Except as specifically provided in this Plan of Unitization, all rights of any and all persons in and to such other reservoirs or common sources of supply of Oil and Gas and the production therefrom, together with the right of ingress and egress and the use of the surface of the Unit Area for the exploration, development and operation of such other reservoirs or common sources of supply of Oil and Gas, are expressly reserved unto the separate owners thereof and shall remain unaffected by the creation of the Unit and the adoption of this Plan of Unitization, all to the same extent as if this Plan of Unitization had not been adopted except that in the exercise of such rights the owners thereof shall have due regard for the rights granted the Unit with respect to its operations hereunder. Likewise, any reference in this Plan of Unitization to a Separately Owned Tract or to the Unit Area, although in general terms broad enough to include the surface and all underlying common sources of supply of Oil and Gas, shall have reference to the lands embraced within such Separately Owned Tract and within the Unit Area only in relation to the Medrano Sand of the West Cement Field.

XXIV

Abandonment of Wells

If the Operating Committee at any time desires to abandon any well completed in the Medrano Sand and salvage the casing and other equipment that is a part of the well, the Lessee or Lessees of the Separately Owned Tract on which such well is located shall be notified in writing of such decision and shall have and be granted thirty (30) days from receipt of such notice within which to elect to take over such well for the purpose of completing the same [fol. 1761] in some other formation not a part of the Unit

Area. Any such Lessee electing to take over such a well shall pay the salvage value of the casing and other equipment in and on the well, determined in accordance with Section IV of the accounting procedure hereto attached marked "Exhibit C", and shall agree to assume full responsibility for the proper plugging and abandonment thereof at such time as the well is ultimately abandoned. No such well shall be operated or used for the production of Oil and Gas from the Unit Area and to that end the Lessee taking over such a well shall immediately cause the Medrano Sand in such well to be sealed off in a manner satisfactory to the Operating Committee. In the event the Lessee or Lessees of such a Separately Owned Tract do not elect to take over such well, the Unit Operator shall proceed to properly plug and abandon the same and salvage the casing and other equipment therefrom.

XXV

Abandonment of Operations and Dissolution of Unit

At such time as it is determined by the Operating Committee that Unit Production can no longer be produced from the Unit Area in paying quantities the further development and operation of the Unit Area by the Unit shall be abandoned, the Unit dissolved and its affairs wound up.

Upon abandonment of Unit Operations,

(a) All rights in and to the several Separately Owned Tracts shall revert to the separate owners and Lessees thereof;

(b) The owner or Lessee of a Separately Owned Tract desiring to take over and continue to operate a well located on such Separately Owned Tract may do so by paying the salvage value of the casing and other equipment in and on the well determined in accordance with Section IV of the accounting procedure hereto attached marked "Exhibit C" and by agreeing to properly plug and abandon the well at such time as it is ultimately abandoned;

(c) With respect to all wells not taken over by the owner or Lessees of the Separately Owned Tracts as aforesaid, the Unit Operator shall salvage so much of the casing and other equipment therein as can economically and reasonably be

salvaged and shall cause such well to be properly plugged and abandoned;

(d) The salvaging, liquidation or other distribution of assets and properties used in the operation of the Unit Area shall be in a manner determined by the Operating Committee; provided, any Lessee desiring to take its share of the physical assets or any portion thereof in kind may do so. All such assets and property shall belong to the several Lessees in proportion to their respective interests in the Unit.

[fol. 1762] At such time as the Unit Operations are abandoned and the affairs of the Unit wound up, the Unit shall submit for filing a declaration to that effect with the Secretary of the Corporation Commission and with the County Clerk of Caddo County, Oklahoma, whereupon the rights, powers and duties of the Unit shall be at an end.

XXVI

Amendment to Plan of Unitization and Enlargement of Unit

Any amendment of this Plan of Unitization or any enlargement of the Unit or Unit Area shall be in accordance with the provisions of Sections 11 and 12 of House Bill 339 of the 1945 Legislature of the State of Oklahoma or any amendment thereto.

XXVII

Subscribers

Provision is made below for the signing of this Plan of Unitization by Lessees within the Unit Area who wish to expressly signify their agreement to the terms, provisions and conditions hereof. Such Lessees may sign either as Unqualified or Qualified Subscribers. Those signing as Unqualified Subscribers agree to all the terms, provisions and conditions hereof, including the agreement to participate in carrying the Lessees who elect to be carried under the provisions of Section XI. Those signing as Qualified Subscribers agree to all the terms, provisions and conditions hereof, except that they reserve the right to be carried in respect to the payment of Unit Expense as is provided in Section XI and do not agree to participate in carrying the other Lessees who elect to be carried under the terms of

said Section. This Plan of Unitization may be so signed by the subscribers hereto at any time, the original of which shall at all times from and after the approval hereof by the Commission remain on file in the office of the Secretary of the Commission. In lieu of signing the original of this Plan of Unitization, any Lessee desiring to subscribe hereto, either as an Unqualified or Qualified Subscriber, may do so by separate instrument filed with the Secretary of the Commission, all with the same effect as if such Lessees signed the original.

The signing hereof by any Lessee shall be binding upon the heirs, personal representatives, successors and assigns of such Lessees.

The signing hereof by each of the subscribers hereto is conditioned upon the approval of this Plan of Unitization by the Corporation Commission.

[fol. 1763] The signing hereof by the Unqualified Subscribers is further conditioned upon the signing hereof by Unqualified Subscribers who, under this Plan of Unitization based on present lease ownership, will own sixty-five per cent (65%) or more in interest in the Unit.

Unqualified Subscribers: Amerada Petroleum Corporation, By —— ——; Anderson-Prichard Oil Corporation, By —— ——; Cities Service Oil Company, By —— ——; Foster Petroleum Corporation, By —— ——; Gulf Oil Corporation, By —— ——; Magnolia Petroleum Company, By —— ——; Palmer Oil Corporation, By —— ——; Phillips Petroleum Company, By —— ——; Ray Stephens, Inc., By —— ——; Stephens Petroleum [fol. 1764] Company, By —— ——; Sunray Oil Corporation, By —— ——.

Qualified Subscribers: —— ——, By —— ——, etc.

(Here follows 1 photolithograph, side folios 1765-1766)

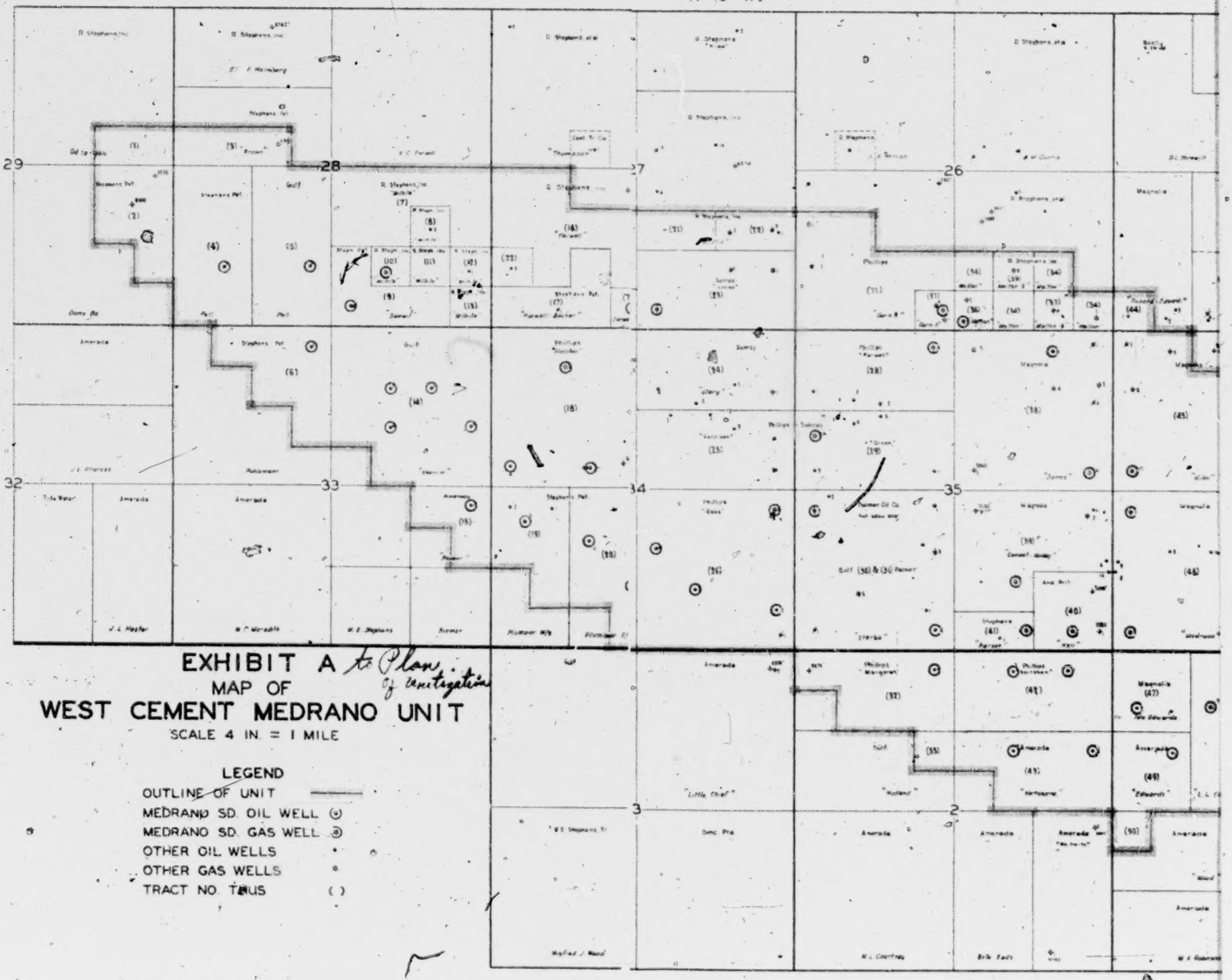


EXHIBIT A to Plans of Investigation

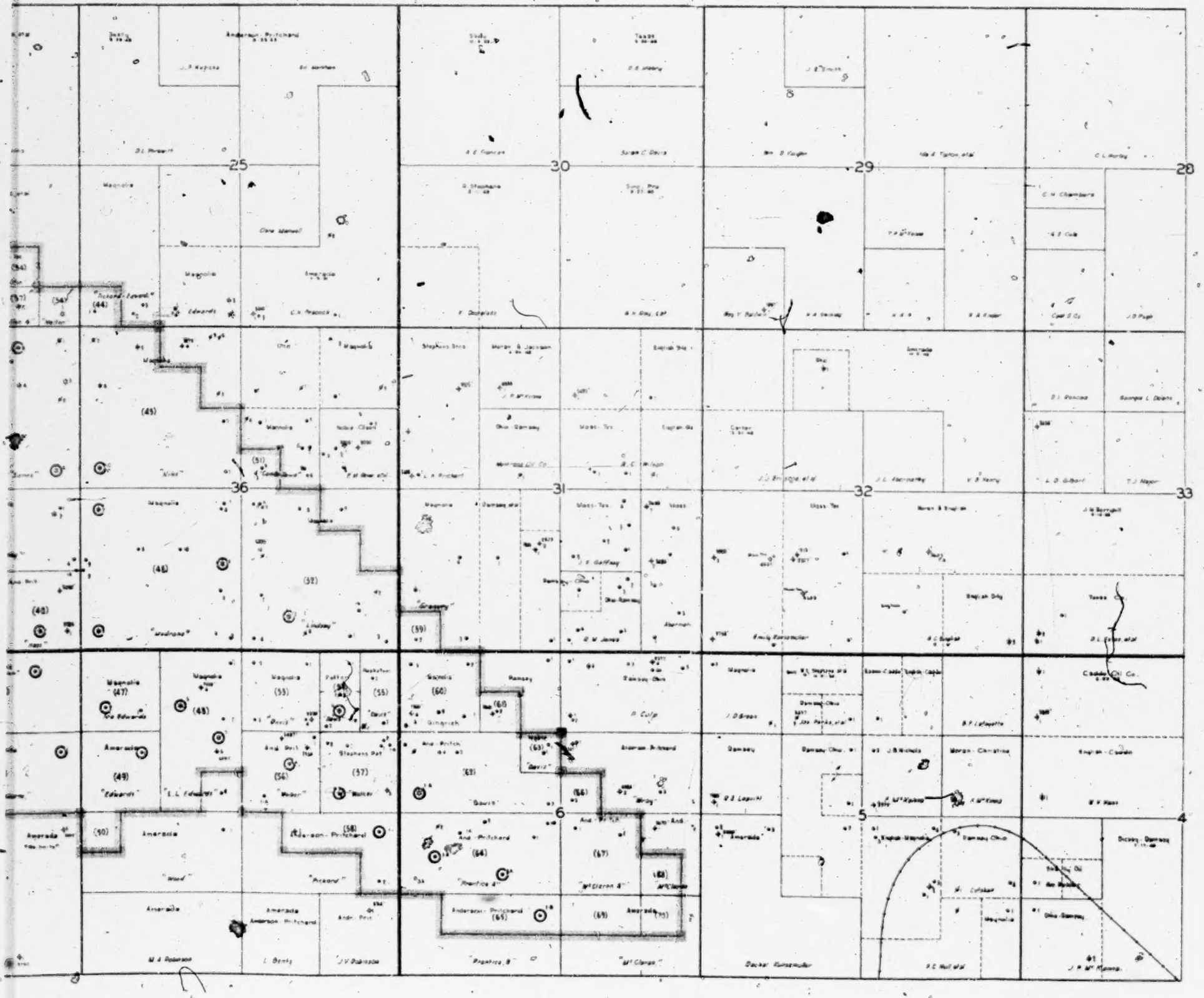
MAP OF

WEST CEMENT MEDRANO UNIT

SCALE 4 IN. = 1 MILE

LEGEND

OUTLINE OF UNIT	———
MEDRANO SD. OIL WELL	⊙
MEDRANO SD. GAS WELL	⊙
OTHER OIL WELLS	•
OTHER GAS WELLS	•
TRACT NO. THUS	( )



1765=1766

[fol. 1767]

EXHIBIT "B"

Part I—To Plan of Unitization

Tract Number	Lease Name	Legal Description	Sec.	Twp.	Range	Operator	Percentage of Interest in Unit
1	Odla-Tahle	S/2 SE NE	29	6N	10W	Ray Stephens, Inc.	0.18442%
2	Dome-Bo	NE SE & NE SE SE	29	6N	10W	Stephens Petroleum Co.	0.78785
3	Brown	S/2 SW NW & SW SE NW	28	6N	10W	Stephens Petroleum Co.	0.08253
4	Pell	W/2 SW	28	6N	10W	Stephens Petroleum Co.	3.51358
5	Pell	E/2 SW	28	6N	10W	Gulf Oil Corporation	2.65959
6	Pohleman	NE NW & NE SE NW & NE NW NW	33	6N	10W	Stephens Petroleum Co.	1.96799
7	Wilhite	N/2 SE less SW NE SE	28	6N	10W	Ray Stephens, Inc.	0.07288
8	Wilhite	SW NE SE	28	6N	10W	Ray Stephens, Inc.	0.01154
9	Samwill	W/2 SW SE & SE SW SE & SW SE SE	28	6N	10W	Stephens Petroleum Co.	1.18366
10	Wilhite	NE SW SE	28	6N	10W	Ray Stephens, Inc.	0.04615
11	Wilhite	NW SE SE	28	6N	10W	Ray Stephens, Inc.	0.01540
12	Wilhite	NE SE SE	28	6N	10W	Ray Stephens, Inc.	0.01749
13	Wilhite	SE SE SE	28	6N	10W	Ray Stephens, Inc.	0.02700
14	Sherritt	NE/4 less SW SW NE	33	6N	10W	Gulf Oil Corporation	13.11109
15	Beemer	NE SE less SW NE SE	33	6N	10W	Amerada Petroleum Co.	1.12313
16	Farwell	NW SW & NE SW SW & S/2 NE SW & NE SE SW	27	6N	10W	Ray Stephens, Inc.	0.07715
17	Farwell-Becker	S/2 SW SW & W/2 SE SW	27	6N	10W	Stephens Petroleum Co.	0.11581
18	Fletcher	NW/4	34	6N	10W	Phillips Petroleum Co.	5.37390
19	Plummer—W/2	NW SW & NE SW SW	34	6N	10W	Stephens Petroleum Co.	4.09025
20	Plummer—E/2	E/2 SW less SW SE SW	34	6N	10W	Stephens Petroleum Co.	6.86555
21	Griffin	S/2 NW SE	27	6N	10W	Ray Stephens, Inc.	0.00828
22	Griffin	S/2 NE SE	27	6N	10W	Ray Stephens, Inc.	0.00163
23	Loose	S/2 SE	27	6N	10W	Sunray Oil Corporation	0.31227
24	Ulrey	N/2 NE	34	6N	10W	Sunray Oil Corporation	0.43240
25	Garrison	S/2 NE	34	6N	10W	Sunray Oil Corporation	0.31484

[fol. 1768]

EXHIBIT "B"

Part I—To Plan of Unitization

Tract Number	Lease Name	Legal Description	Sec.	Twp.	Range	Operator	Percentage of Interest in Unit
26	Oaks	SE/4	34	6N	10W	Phillips Petroleum Co.	11.21393
27	Garn "A"	SE SE SW	26	6N	10W	Phillips Petroleum Co.	0.02277
28	Farwell	N/2 NW	35	6N	10W	Phillips Petroleum Co.	0.18958
29	Dixon	S/2 NW	35	6N	10W	Sunray Oil Corporation	0.52429
30	Sterba (below 6000')	SW/4	35	6N	10W	Gulf Oil Corporation	2.15688
31	Sterba (above 6000')	SW/4	35	6N	10W	Palmer Oil Corporation	5.51614
32	Margaret	N/2 NW less SW NW NW	2	5N	10W	Phillips Petroleum Co.	3.87549
33	Holland	NE SE NW	2	5N	10W	Gulf Oil Corporation	0.06049
34	Melton	NW SW SE & SE SW SE & NW SE SE & SE SE SE	26	6N	10W	Ray Stephens, Inc.	0.02614
35	Melton No. 2	NE SW SE	26	6N	10W	Ray Stephens, Inc.	0.00198
36	Melton No. 1	SW SW SE	26	6N	10W	Ray Stephens, Inc.	0.01211
37	Melton No. 4	SW SE SE	26	6N	10W	Ray Stephens, Inc.	0.01693
38	Sames	NE/4	35	6N	10W	Magnolia Petroleum Co.	0.57283
39	Cement-Henley	N/2 SE & N/2 SW SE	35	6N	10W	Magnolia Petroleum Co.	1.59617
40	Hays	SE SE	35	6N	10W	Anderson-Prichard Oil Corp.	0.58977
41	Pierson	S/2 SW SE	35	6N	10W	Stephens Petroleum Co.	1.47267
42	Hartshorn	N/2 NE	2	5N	10W	Phillips Petroleum Co.	8.23583
43	Hartshorn	S/2 NE less SW SW NE	2	5N	10W	Amerada Petroleum Corp.	4.03085
44	Pickard Edwards	SW SW SW	25	6N	10W	Magnolia Petroleum Co.	0.00422
45	Niles	NW NW & S/2 NW & SW NE NW	36	6N	10W	Magnolia Petroleum Co.	0.36728
46	Medrano	SW/4	36	6N	10W	Magnolia Petroleum Co.	0.59865
47	I. Edwards	NW NW	1	5N	10W	Magnolia Petroleum Co.	2.36562
48	L. L. Edwards	E/2 NW	1	5N	10W	Magnolia Petroleum Co.	1.86102
49	Edwards	SW NW	1	5N	10W	Amerada Petroleum Co.	3.54720
50	Wood	NW NW SW	1	5N	10W	Amerada Petroleum Co.	0.18412
51	Caddo-Rowe	SW SW NE	36	6N	10W	Magnolia Petroleum Co.	0.00495
52	Lindsay	S/2 SE & NW SE & SW NE SE	36	6N	10W	Magnolia Petroleum Co.	0.31433
53	Davis	NW NE	1	5N	10W	Magnolia Petroleum Co.	0.34024
54	Davis	W/2 NE NE	1	5N	10W	Potter	0.06642
55	Davis	E/2 NE NE	1	5N	10S	F. L. Rookstool	0.03249

[fol. 1769]

56	Walker	SW NE	1	5N	10W	Anderson-Prichard Oil Corp.	1.55533
57	Walker	SE NE	1	5N	10W	Stephens Petroleum Co.	1.18658
58	Pickard	N/2 NE SE & SE NE SE & NE NW SE	1	5N	10W	Anderson-Prichard Oil Corp.	1.09412
59	Gregory	SW SW SW	31	6N	9W	Magnolia Petroleum Co.	0.00329
60	Gingrich	NW NW	6	5N	9W	Magnolia Petroleum Co.	0.02882
61	Gingrich	SW NE NW	6	5N	9W	Stanolind Oil & Gas Co.	0.00133
62	Davis	SW NW & S/2 SE NW & NW SE NW	6	5N	9W	Anderson-Prichard Oil Corp.	0.40951
63	Davis	NE SE NW	6	5N	9W	Lloyd Noble	0.00073
64	Prentice "A"	N/2 SW	6	5N	9W	Anderson-Prichard Oil Corp.	2.58742
65	Prentice "B"	N/2 SE SW & NE SW SW	6	5N	9W	Anderson-Prichard Oil Corp.	0.52078
66	Wray	SW SW NE	6	5N	9W	Anderson-Prichard Oil Corp.	0.00065
67	McClaren "A"	NW SE	6	5N	9W	Anderson-Prichard Oil Corp.	0.06316
68	McClaren "B"	SW NE SE	6	5N	9W	Anderson-Prichard Oil Corp.	0.01446
69	McClaren	N/2 SW SE	6	5N	9W	Amerada Petroleum Co.	0.13116
70	McClaren	NW SE SE	6	5N	9W	Amerada Petroleum Co.	0.02458
71	Garn "B"	S/2 NW SW & SW SW & W/2 SE SW & NE SE SW	26	6N	10W	Phillips Petroleum Co.	0.04096
72	Farwell #2	SE SE SW & NW SW SW	27	6N	10W	Ray Stephens, Inc.	0.13935
TOTAL							100.00000%

NOTE: All leases are subject to the adjustment outlined in Exhibit "B"—Part II.

[fol. 1770] EXHIBIT "B"

Part II to Plan of Unitization

For the purpose of this exhibit:

(a) The following amounts of the Unit Production of Oil shall be regarded as "*Normal Production*" for the years shown opposite the amounts so named:

Year Following Effective Date	*Daily Average in Barrels*
1st year	5,225 Barrels
2nd year	5,075 "
3rd year	4,925 "
4th year	4,775 "
5th year	4,775 "
6th year	4,203 "
7th year	3,872 "
8th year	3,788 "

(b) All Unit Production of Oil in excess of said Normal Production shall be regarded as "*Excess Production*".

(c) "*Time of Acceleration*" shall mean and include the time from the Effective Date to the end of five consecutive periods, each consisting of 12 calendar months, with the exception that any month shall not be counted as a month fixing the term of each such period if the Unit Production of Oil during such month is less than the Normal Production as a sole and direct consequence of a statewide proration order of the Corporation Commission. The five periods aforesaid shall be designated consecutively as Periods 1, 2, 3, 4 and 5.

(d) "*Time of Deceleration*" shall mean and include the time from the end of the Time of Acceleration and continuing until such time as the total number of additional barrels of Oil allocated to Separately Owned Tracts numbered 56, 57, 58, 64 and 65 during the Time of Acceleration as hereinafter provided, is offset by a like number of barrels of Oil allocated to the other Separately Owned Tracts during such Time of Deceleration, as hereinafter provided. [fol. 1771] During the Time of Acceleration the Normal Production of Oil as hereinabove defined shall be allocated

to all the several Separately Owned Tracts within the Unit Area in proportion to their respective percentages of interest shown in Part I of this Exhibit.

The Excess Production, if any, in any month during the Time of Acceleration and if sufficient for that purpose, shall be allocated to Separately Owned Tracts numbered 56, 57, 58, 64 and 65 in such amounts as to allocate to each such Separately Owned Tract the following amounts of Oil in excess of the number of barrels of Normal Production allocated to such Separately Owned Tracts.

Number of Period	*Percent in Excess of Normal*
1	100%
2	75%
3	50%
4	25%
5	10%

If the Excess Production in any month during the Time of Acceleration exceeds the amount required to satisfy the aforesaid increased allocations to the 5 Separately Owned Tracts last hereinabove named, the excess shall be allocated to all of the several Separately Owned Tracts within the Unit Area in proportion to their respective percentages of interest as shown in Part I of this Exhibit.

If the Excess Production, if any, in any month during the Time of Acceleration is not sufficient to satisfy in full the aforesaid increased allocations to the 5 Separately Owned Tracts hereinabove named, then and in that event the amount of such Excess Production shall be allocated to said 5 Separately Owned Tracts in the proportion that the percentage of interest of each such tract bears to the sum of the percentages of interest of all of said 5 tracts, [fol. 1772] as shown in Part I of this Exhibit.

During the Time of Deceleration the amount of the Unit Production of Oil allocated each month to the 5 Separately Owned Tracts hereinabove specifically named, shall be 50% of their respective percentages of interest as shown in Part I of this Exhibit, until such time as the total accumulated number of barrels of Oil so withheld from such tracts by reason of said 50% reduction in percentage shall exactly equal the total accumulated number of additional

barrels of Oil allocated to said tracts by reason of the special increase in allocation granted such tracts during the Time of Acceleration as hereinabove provided. The Unit Production of Oil so withheld from said 5 Separately Owned Tracts hereinabove specifically named by reason of said 50% reduction in the percentage allocation to such tracts shall be allocated to the other Separately Owned Tracts in the Unit Area, exclusive of the 5 tracts hereinabove specifically named, in the proportion that the percentages of interest of each bears to the sum of the percentages of interest of all such other tracts, exclusive of the 5 specifically named tracts, as shown in Part I of this Exhibit.

After the End of the Time of Deceleration all Unit Production shall be allocated to all the several Separately Owned Tracts within the Unit Area in proportion to their respective percentages of interest as shown in Part I of this Exhibit.

[fol. 1773] EXHIBIT "C" TO PLAN OF UNITIZATION

Accounting Procedure

The term "joint property" as herein used shall be construed to mean the Unit Area covered by the Plan of Unitization to which this "Accounting Procedure" is attached, together with any processing or other plants and facilities used in the development and operation of such Unit Area.

The term "Operator" as herein used shall be construed to mean the Unit Operator designated to conduct the development and operation of the joint property for the joint account.

I—Development and Operating Charges

Subject to limitations hereinafter prescribed, Operator shall charge the joint account with the following items:

(1) Delay or other rentals, when such rentals are paid by Operator for the joint account.

(2) Labor, teaming and other services necessary for the development, maintenance and operation of the joint property.

(3) Materials, equipment and supplies purchased or furnished by Operator from its warehouse stocks or from its other leases for use on the joint property. Insofar as is practical and consistent with efficient and economical operation, only such materials shall be purchased for or transferred to the joint property as are required for immediate use, and the accumulation of warehouse or lease stock on the joint property shall be avoided.

(4) Moving materials to the joint property from vendor's or from Operator's warehouse in the district or from other properties of Operator, but in either of the last events no charge shall be made to the joint account for a distance greater than the distance from the nearest reliable supply store or railway receiving point.

(5) Moving surplus materials from the joint property to outside vendees, if sold f.o.b. destination, or minor returns to Operator's warehouse or other storage point. No charge shall be made to the joint account for moving major surplus materials to Operator's warehouse or other storage point for a distance greater than the distance to the nearest reliable supply store or railway receiving point, except by authority of the Operating Committee; and no charge shall be made to the joint account for moving materials to other properties belonging to Operator, except by authority of the Operating Committee.

(6) Use of and service by Operator's exclusively owned equipment and utilities as provided in Paragraph (6) of Section II: "Basis of Charges to Joint Account."

(7) Damages or losses incurred by fire, flood, storm or from any other cause not controllable by Operator through the exercise of reasonable diligence. Operator shall furnish the Operating Committee written notice of damages [fol. 1774] or losses incurred by fire, storm, flood or other natural or accidental causes as soon as practicable after report of the same has been received by Operator.

(8) Expenses of litigation, liens, judgments and liquidated claims involving the joint property or incident to its development and operation. Actual expenses incurred by Operator in securing evidence pertaining to the joint property shall be a proper charge against the joint account.

(a) When any case, by prior agreement, is handled by Operator's legal staff, thereby eliminating the re-

taining of outside counsel, a charge commensurate with the cost of services rendered may be made to the joint account. Charges of this nature shall not be rendered until the Operating Committee has approved the amount thereof.

(b) Fees and expenses of outside attorneys shall not be charged to the joint account except where the employment of such outside attorneys is authorized by the Operating Committee.

(9) All taxes paid for the benefit of the parties in interest including ad valorem, property, gross production, occupation and any other taxes assessed against the jointly-owned properties, the production therefrom or the operations thereon.

(10) Insurance:

(a) Premiums paid for insurance carried for the benefit of the joint account together with all expenditures incurred and paid in settlement of any and all losses, claims, damages, judgments and other expenses, including legal services, not recovered from insurance carrier.

(b) If no insurance is required to be carried, all actual expenditures incurred and paid by Operator in settlement of any and all losses, claims, damages, judgments and any other expenses, including legal services, shall be charged to the joint account.

(11) Overhead:

In lieu of any charge for the salaries and expense of officers and employees of Operator other than employees directly assigned to the operation of the joint property and employees performing special work pursuant to authority of the Operating Committee, and, in lieu of any charge for office and camp expense other than the expense of a field office or camp, if any, required for the operation of the joint property, the Operator shall have the right to charge the joint account with the following overhead charges:

(a) $150.00 per month for each drilling well, beginning on the date the well is spudded and terminating

when it is on production or is plugged, as the case may be, except that no charge shall be made during suspension of drilling operations for fifteen (15) or more consecutive days.

[fol. 1775] (b) $50.00 per well per month for the first ten (10) producing wells.

(c) $40.00 per well per month for the second ten (10) producing wells.

(d) $25.00 per well per month for all producing wells over twenty (20).

(e) $20.00 per well per month for injection wells.

(f) An allowance to be agreed upon between the operator and operating Committee with respect to the construction and operation of any gas injection plant and faciilities if and when the construction and operation thereof is authorized.

In connection with overhead charges, the status of wells shall be as follows:

(1) Producing gas wells shall be included in overhead schedule the same as producing oil wells.

(2) Wells permanently shut down but on which plugging operations are deferred, shall be dropped from overhead schedule at the time the shutdown is effected. When such wells are plugged, overhead shall be charged at the producing well rate during the time required for plugging operations.

(3) Wells being plugged back or drilled deeper shall be included in overhead schedule the same as drilling wells.

(4) If and when a well is temporarily shut down (other than for proration) and not produced or worked upon for a period of a full calendar month, it shall not be included on the overhead schedule for such month.

(5) Salt water disposal wells shall not be included in overhead schedule.

The above specific overhead rates are subject to adjustment and shall be amended from time to time by agreement between Operator and the Operating

Committee if, in practice, they are found to be insufficient or excessive.

(12) Warehouse Handling Charges: None.

(13) Any other expenditure incurred by Operator for the necessary and proper development, maintenance, and operation of the joint property, except that Operator shall not charge the joint account with any expenditure or contribution made by Operator towards employes' stock purchase plan, group life insurance, pension, retirement, or bonus, other than such expenditures or contributions imposed or assessed by governmental authority.

II—Basis of Charges to Joint Account

(1) Outside Purchases: All materials and equipment [fol. 1776] purchased and all service procured from outside sources shall be charged at their actual cost to Operator, after deducting any and all trade or cash discounts actually allowed off invoices, or received by Operation.

(2) New materials furnished by Operator (Condition "A"):

New materials transferred to the joint property from Operator's warehouse or other properties shall be priced f.o.b. the nearest supply store or railway receiving point at replacement cost of the same kind of materials. This will include large equipment such as tanks, rigs, pumps, boilers and engines. All tubular goods (2" and over) shall be charged on the basis of mill shipment or carload price. Other materials, where the replacement cost cannot be readily ascertained, may, for the purposes of consistency and convenience, be charged on the basis of a reputable supply company's preferential list price f.o.b. nearest supply store or railway receiving point to the joint property prevailing on the date of transfer of the materials to the joint property.

In determining the value of any transferred materials, all special and preferential discounts shall be allowed but the regular cash discount shall not be considered.

(3) Secondhand materials furnished by Operator (Conditions "B" and "C"):

(a) Tubular goods (2" and over), fittings, machinery and other equipment which is in sound and serviceable condition at date of transfer, will be classed as condition "B" and charged at 75% of the price of new materials, in accordance with the provisions of Paragraph (2) above.

(b) Tanks, derricks, and buildings or other equipment involving erection costs shall be charged on a basis not to exceed 75% of knocked-down new price for similar materials.

(c) Other secondhand materials, such as units of machinery or other equipment that is serviceable, but substantially not good enough to be considered first-class secondhand material when transferred to the joint property, shall be classed as condition "C" and charged at 50% of the new price.

(d) There may also be cases where some items of equipment, due to their unusual condition, should be fairly and equitably priced by Operator.

(4) Warranty of Materials Furnished by Operator: Operator does not warrant the materials furnished from its warehouse or other properties beyond or back of the dealer's or manufacturer's guaranty, and in case of defective materials, credit shall not be passed until adjustment has been received by Operator from the manufacturers or their agents.

(5) If materials required are not available in Operator's surplus stocks, Operator shall whenever in its judgment it is practical to do so, give to other lessees within the Unit Area opportunity of furnishing the materials required in [fol. 1777] proportion to their interest, provided that the same can be furnished at the time such materials are required, and further provided that any such materials so furnished shall be in condition acceptable to Operator and shall be charged to the joint account on the same terms and conditions as are provided herein to cover the furnishing of materials by Operator.

(6) Operator's Exclusively-owned Facilities: The following rates shall apply to service rendered to the joint property by facilities owned exclusively by Operator:

(a) Water service, gas, teaming, power, and compressor service: All at rates currently prevailing in the field where the joint property is located.

(b) Automotive Equipment: Rates commensurate with cost of ownership and operation and in line with schedule of rates adopted by the Petroleum Motor Transport Association as recommended uniform standardized charges against the joint account. Automotive charges will be based on use in actual service on or in connection with the joint property. Truck, tractor and pulling unit rates shall include wages and expenses of driver.

(c) A fair rate shall be charged for the use of drilling and cleaning-out tools and any other items of Operator's fully-owned machinery or equipment which shall be ample to cover maintenance, repairs, depreciation and the service furnished the joint property. Provided, however, that such charges shall not exceed those currently prevailing in the field where the joint property is located.

(d) Whenever requested, Operator shall inform the other lessees within the Unit Area in advance of the rates it proposes to charge.

(e) Rates shall be revised and adjusted from time to time when found to be either excessive or insufficient.

III—Disposal of Lease Equipment and Materials

(1) Materials purchased by Operator shall be credited to the joint account and included in the monthly statement of operations for the month in which the materials are removed from the joint property.

(2) Materials purchased by other lessees within the Unit Area shall be invoiced by Operator and paid for by such lessees to Operator immediately following receipt of invoice and delivery of materials. Operator shall thereupon immediately pass credit to the joint account and include

the same in the monthly statement of operations for the month in which the materials were paid for by such lessees.

(3) Division of materials in kind, if made between Operator and other lessees within the Unit Area shall be in proportion to their respective interests in the joint property. Each party will thereupon be charged individually with the value of the materials received or receivable and [fol. 1778] corresponding credits will be made to the joint account by the Operator, and, both credits shall appear in the same monthly operating statement.

(4) Sales to outsiders of major materials shall be made only with the approval of the Operating Committee as to both terms and price and where made the proceeds shall be credited by Operator to the joint account at the full amount collected from vendee. Any claims by vendee for defective materials or otherwise shall be charged back to the joint account, if and when paid by Operator.

IV—Basis of Pricing Materials Transferred from Joint Account

Materials and equipment purchased by either Operator or the lessees in the Unit Area, or divided in kind between them, unless otherwise approved by the Operating Committee, shall be valued on the following basis of condition and price: (New price as used in the following paragraphs shall have the same meaning and application as that used above in Section II: "Basis of Charges to Joint Account").

(1) New Materials: (Condition "A") being new equipment or supplies purchased or procured for the joint property but never used thereon; at 100% of current new prices.

(2) Good Secondhand Materials: (Condition "B") being good serviceable materials which are further usable without repair, at:

(a) 75% of current new prices, if materials were new when originally charged to the joint property.

(b) 75% of current new prices less depreciation consistent with their usage on and service to the joint property, if materials were originally charged to the joint property as secondhand at 75% of new prices.

(3) Other Used Materials: (Condition "C") being materials further usable for their original function only after repair and reconditioning; at 50% of current new prices.

(4) Bad Order Materials: (Condition "D") being materials not further usable for their original function but for possible other service; at 25% of current new prices.

(5) Junk: (Condition "E") being obsolete and unserviceable materials; at prevailing junk prices in the district. Where practicable, junk should be disposed of at the joint property.

(6) Temporarily Used Materials: When the use of certain items of equipment on the joint property has been only temporary, and the time of actual use thereon does not justify the deduction of depreciation as listed in (a) and (b) of Paragraph (2) hereof, such materials will be priced on a basis that will leave a net charge against the joint account consistent with the service rendered and adequate for the time the materials were in use.

V—Inventories

Periodic inventories of the materials and equipment of the joint property, which shall include such materials and equipment as are ordinarily considered controllable by Operators of oil and gas properties, shall be taken by Operator at such times and under such conditions as may be prescribed by the Operating Committee.

[fol. 1779]

EXHIBIT "D" TO PLAN OF UNITIZATION

Operator, Lease and Well	Tract Number	Assigned Value of Well
Amerada Petroleum Corporation		
Beemer #1	15	$59,038
Edwards #1	49	53,899
Hartshorn #1	43	57,995
Hartshorn #2	43	58,986
Anderson-Prichard Oil Corporation		
Davis #1-A	62	20,483
Hays #1	40	20,387
Pickard #1	58	51,198
Prentice "A" #3	64	52,240
Prentice "A" #4	64	50,924
Prentice "B" #1	65	53,686
Walker #2	56	52,168
Gulf Oil Corporation		
Pell #1	5	50,125
Sherritt #1	14	55,586
Sherritt #2	14	52,920
Sherritt #3	14	52,929
Sherritt #4	14	59,073
Magnolia Petroleum Company		
I. Edwards #2	47	54,085
L. L. Edwards #5	48	20,955
L. L. Edwards #7	48	20,869
Cement-Henley #5	39	20,185
Lindsay #12	52	17,323
Medrano #6	46	16,632
Medrano #7	46	14,993
Medrano #11	46	19,458
Niles #10	45	13,826
Sames #6	38	14,022
Sames #8	38	13,666
Palmer Oil Corporation		
Sterba #3	31	17,730
Sterba #4	31	55,064
Sterba #7	31	55,126
Phillips Petroleum Company		
Farwell #4	28	14,494
Fletcher #5	18	17,968
Fletcher #6	18	54,832
Fletcher #7	18	49,154
Garn "A" #5	27	14,188
Hartshorn #1	42	51,693
Hartshorn #2	42	54,989

[fols. 1780-1781]

Margaret #1	32	56,908
Oaks #1	26	18,186
Oaks #2	26	53,835
Oaks #3	26	55,329
Oaks #4	26	53,771

EXHIBIT "D" TO PLAN OF UNITIZATION—Continued

Operator, Lease and Well	Tract Number	Assigned Value of Well
Potter		
Davis #1	54	19,032
Ray Stephens, Inc.		
Melton 1, #1	36	14,319
Wilhite #3	10	19,116
Farwell #2	16	15,812
Stephens Petroleum Company		
Pierson #1	41	21,797
Plummer W/2, #3	19	57,609
Plummer E/2, #4	20	56,107
Plummer E/2, #5	20	57,663
Pohleman #1	6	56,837
Samwill #1	9	50,090
Pell #1	4	56,625
Walker #1	57	57,834
Sunray Oil Corporation		
Dixon #1-A	29	16,376
Loose #3	23	15,376
Total		$2,165,571

[fol. 1782] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title omitted]

MOTION TO SET ASIDE FINDINGS OF FACT AND CONCLUSIONS OF LAW AND IN LIEU THEREOF TO MAKE OTHER FINDINGS OF FACT AND CONCLUSIONS OF LAW—Filed September 5, 1947.

Comes Now the Palmer Oil Corporation, one of the Protestants in the above matter, and moves the Honorable Commission for an Order to set aside its Findings of Fact and Conclusions of Law, entered in the above matter under date of September 5, 1947, and in lieu thereof to make the following Findings of Fact and Conclusions of Law, to-wit:

Requested Findings of Fact

The Corporation Commission of the State of Oklahoma in Cause No. C. D. 1308, makes the following Findings of Fact:

First: That the production of oil and gas from the Medrano oil and gas bodies in the West Cement Oil Field in Caddo County, Oklahoma, is now being had without waste, [fol. 1783] the same being had in accordance with the Rules, Regulations and Orders of the Corporation Commission of the State of Oklahoma.

Second: The Medrano Sand Horizon in the West Cement Oil Field in Caddo County, Oklahoma, is completely separated into two or more common sources of supply from and between which there is no communication of oil or gas by reason of the presence of faults extending through such horizon constituting sealed barriers.

Third: That the West Cement Oil Field in Caddo County, Oklahoma, in which the Medrano Sand body lies in separate segments, is a field in which oil was discovered in commercial quantities and produced in the year 1918, and at all times subsequent thereto.

Fourth: That unitized management, operation and further development for and of oil and gas from the several separate common sources of supply thereof in the Medrano sand in the West Cement Oil Field in Caddo County, Oklahoma, will not substantially increase the recovery of oil and gas therefrom, or decrease the time in which the same will be recovered, adequate conservation measures now in force and effect being continued in force and effect by the Corporation Commission of the State of Oklahoma in respect thereto.

Fifth: That the plan of compulsory unitization here proposed is not feasible.

Sixth: That under operations which might be conducted [fol. 1784] by virtue of the adoption of the proposed plan here under consideration, the value of the oil and gas which might be produced from the Medrano Sand in its several, separate common sources of supply would not be sufficiently in excess of that which would be produced in the normal operations with respect to said Medrano Sand to equal the cost of the operations under such compulsory unitization.

Seventh: That the compulsory unitization under the plan here proposed is not for the common good of all interested parties.

Eighth: That the proposed plan of compulsory unitization here under consideration is inequitable and unjust.

Ninth: That the proposed plan of compulsory unitization here under consideration, if adopted, would effect the taking of property of certain royalty and lease owners and give it to others without just compensation.

Tenth: That the proposed plan of compulsory unitization here under consideration would, if adopted, include areas which have not reasonably been defined by actual drilling operations.

Eleventh: The division of interest or formula for the apportionment and allocation of the purported unit production among the several separately owned tracts within the proposed unit area under the plan of compulsory unitization here proposed, if adopted, is not fair, reasonable or equitable.

[fol. 1785] Twelfth: The division of interest or formula for the apportionment and allocation of the purported unit production between the owners of interests within separate tracts within the proposed unit area under the plan of compulsory unitization here proposed, if adopted, is not fair, reasonable or equitable.

Thirteenth: That the plan of compulsory unitization here proposed, if adopted, makes no provision for the adjustment or change of the division of interest or formula for the apportionment and allocation of purported unit production in the event the results of actual future drilling operations establish that such adjustment or change should be made.

Fourteenth: That the plan of compulsory unitization here proposed does not give adequate weight to the location on structure of the several separate tracts within the proposed unit area.

Fifteenth: That the plan of compulsory unitization here proposed, if adopted, fails to use as a factor the essential factor of the ability of the several presently drilled and operating oil wells to produce from the Medrano Sand bodies.

Sixteenth: That the plan of compulsory unitization here proposed fails to use as a factor the essential factor representative of the different lifting costs of oil being pro-

duced from the several tracts from the several bodies of Medrano Sand.

[fols. 1786-1787] Requested Conclusions of Law

The Corporation Commission of the State of Oklahoma makes the following Conclusions of Law in Cause C.D. No. 1308:

That the petition filed herein and the amendment thereto, and the evidence presented in support thereof, do not establish that it should be granted under the provisions of *O. S. Supp. 1945, Title 52, Chapter 3, Sections 286.1 to 286.17*, both inclusive, and should, therefore, be denied.

The Palmer Oil Corporation, Protestant, by Monnet Hays and Brown, by (S.) Coleman Hayes, Oklahoma City, Oklahoma; Adams, Jones and Robinson, by (S.) Mark H. Adams, Wichita, Kansas, Attorneys for Protestant.

[File endorsement omitted.]

[fols. 1788-1789] Before the Corporation Commission of the State of Oklahoma

[Title omitted]

Motion for New Trial—Filed September 5, 1947

Comes Now the Protestant, the Palmer Oil Corporation, and moves the Commission to set aside, vacate and hold for naught the Order made in the above entitled cause on the 5th day of September, 1947, said Protestant being aggrieved thereby, and to grant a new trial of said cause for the following reasons and causes which affect materially the substantial rights of said Protestant:

1. That said Order is not sustained by sufficient evidence.
2. That said Order is contrary to the evidence.
3. That said Order is contrary to law.

4. Errors of law occurring at and during the trial duly excepted to by Protestant.

The Palmer Oil Corporation, by Monnet Hays and Brown, by (S.) Coleman Hayes, Oklahoma City, Oklahoma; Adams, Jones and Robinson, by (S.) Mark H. Adams, Wichita, Kansas, Attorneys for Protestant.

[File endorsement omitted.]

[fol. 1790] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title omitted]

ORDER OVERRULING MOTION FOR NEW TRIAL—Filed September 5, 1947

On this 5th day of September, 1947, the motion of protestant for a new trial coming on for hearing and said party being represented, the Commission having heard the arguments of counsel and being fully advised, finds that said motion should be overruled.

It Is Therefore Ordered that the motion of the protestant for a new trial be and the same is hereby overruled, to which ruling of the Court protestant then and there excepted and filed written notice of appeal to the Supreme Court of Oklahoma from the order of the Commission made and entered herein on the 5th day of September, 1947, and said protestant having requested that said notice be duly entered upon the docket of the Commission, same was accordingly done.

[fols. 1791-1792] (S.) Reford Bond, Chairman, (S.) Ray O. Weems, Member, (S.) Ray C. Jones, Member.

[File endorsement omitted.]

[fols. 1793-1794] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title omitted]

NOTICE OF APPEAL OF PALMER OIL CORP.—Filed September 5, 1947

Comes now, the Protestant, the Palmer Oil Corporation, in the above entitled and numbered cause and files this notice of its intention to appeal to the Supreme Court of Oklahoma from Order No. 20289 of the Corporation Commission entered herein on the 5th day of September, 1947, whereby this Commission approved the plan of unitization proposed by Proponents. Said Protestant requests that this notice be duly entered upon the docket of the Corporation Commission as provided by law.

Dated this 5th day of September, 1947.

The Palmer Oil Corporation, Protestant; by Monnet, Hays and Brown; by (S.) Coleman Hayes, Oklahoma City, Oklahoma; Adams, Jones and Robinson; by (S.) Mark H. Adams, Wichita, Kansas, Attorneys for Protestant.

[File endorsement omitted.]

[fol. 1795] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title omitted]

JOURNAL ENTRY ALLOWING APPEAL—Filed September 5, 1947

Now on this 5th day of September, 1947, it appears to the Corporation Commission of the State of Oklahoma, that The Palmer Oil Corporation, a corporation, protestant in the above styled and numbered cause, has filed herein written notice of its intention to appeal to the Supreme Court of the State of Oklahoma from the order of this Commission rendered herein on the 5th day of September, 1947, granting the application and petition for

unitization herein, and that The Palmer Oil Corporation, a corporation, has requested this Commission to certify the entire record in this cause to the Supreme Court of the State of Oklahoma, as prescribed by law.

Now, therefore, it is ordered by the Commission that said appeal be granted and that the Secretary of the Corporation Commission of the State of Oklahoma cause the entire [fols. 1796-1797] record in this case to be transcribed and submitted to the Chairman of the Commission for certification at the earliest possible date.

Done at the office of the Corporation Commission, Capitol Office Building, Oklahoma City, Oklahoma, this 5th day of September, 1947.

Corporation Commission of the State of Oklahoma; by (S.) Reford Bond, Chairman; (S.) Ray O. Weems, Vice-Chairman; (S.) Ray C. Jones, Commissioner.

Attest: (S.) Tom McMurray, Secretary. (Seal.)

[File endorsement omitted.]

[fols. 1798-1799] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title omitted]

MOTION FOR NEW TRIAL OF B. E. JOHNSON, ET AL.—Filed September 8, 1947

Come now the Protestants, B. E. Johnson, M. L. McIntyre and Virginia McIntyre, and move the Commission to set aside, vacate and hold for Naught the Order made in the above entitled cause on the 5th day of September, 1947, said Protestants being aggrieved thereby, and to grant a new trial of said cause for the following reasons and causes which affect materially the substantial rights of said Protestants:

1. That said Order is not sustained by sufficient evidence.

2. That said Order is contrary to the evidence.
3. That said Order is contrary to Law.
4. Errors of Law occurring at and during the trial duly excepted to by Protestants.

B. E. Johnson, M. L. McIntyre and Virginia McIntyre. By (S.) Jack W. Page, Attorney for said Protestants.

[File endorsement omitted.]

[fols. 1800-1801] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title omitted]

ORDER OVERULING MOTION FOR NEW TRIAL—Filed September 8, 1947

Now on this 5th day of September, 1947, the motion of protestants, B. E. Johnson, M. L. McIntyre and Virginia McIntyre for a new trial came on for hearing, and the Commission having heard the arguments of Counsel and being fully advised, finds that said motion should be overruled.

It is therefore ordered that the motion of the said protestants for a new trial be and the same is hereby overruled, to which ruling of the Commission the said named protestants then and there excepted and filed written notice of appeal to the Supreme Court of Oklahoma from the Order of the Commission made and entered herein on the 5th day of September, 1947, and said protestants having requested that said notice be duly entered upon the docket of the Commission, same was accordingly done.

(S.) Reford Bond, Chairman; (S.) Ray O. Weems, Member; (S.) Ray C. Jones, Member.

Attest: (S.) Tom McMurray, Secy.

[File endorsement omitted.]

[fols. 1802-1803] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title omitted]

NOTICE OF APPEAL OF B. E. JOHNSON, ET AL.—Filed September 8, 1947

Come now the Protestants, B. E. Johnson, M. L. McIntyre and Virginia McIntyre in the above entitled and numbered cause and file this written Notice of their intention to appeal to the Supreme Court of Oklahoma from Order No. 20289 entered in the above entitled cause on the 5th day of September, 1947, whereby this Commission approved the plan of Unitization proposed by Proponents and petitioners herein. Said Protestants request that this Notice be duly entered upon the Docket of the Corporation Commission as provided by Law.

Dated this 8th day of September, 1947.

(S.) B. E. Johnson, (S.) M. L. McIntyre, (S.) Virginia McIntyre; by Jack W. Page, Attorney for said named Protestants.

[File endorsement omitted.]

[fol. 1804] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title omitted]

JOURNAL ENTRY ALLOWING APPEAL—Filed September 10, 1947

Now on this 5th day of September, 1947, it appearing to the Corporation Commission of the State of Oklahoma, that: Tom Potter, Clyde Kahle, Maud Kahle, Bob White Oil & Gas Company, Kit C. Farwell, John W. Fletcher, Eva Parker, Frank Pohlemann, Jane A. Jones (Mrs. E. W. Jones), Mabel E. McKirk (Formerly Mabel E. Sherritt), Amerlia Beemer, Florence M. Plummer, Hazel A. Plummer, Virgie M. Updegrove, Thomas O. Plummer, Otis (I. O.) Oaks, Elixabeth Paine, Chas. T. Williams, Regina Schlitt, Ben P. Butler, Ben P. Holland, T. J. Butler, James A.

Holland, Nettie Melton & Fannie McDowell, J. P. McKenna, J. S. Smith, Eva I. Pierson, Ernest S. Pierson, Eva J. Mead, Ella Pierson Price, Clarence M. Pierson, Richard E. Pierson, Minnie E. P. Mooney, L. L. Edwards, T. G. Gann, M. M. Davis, J. F. Ball, Grace E. Niles, Eva Parker, nee Niles, J. D. Davis, Lucy E. Davis, Oza Medrano, Lewis L. Edwards, Jasper Edwards, Ted R. Edwards, Josophens [fol. 1805] Welch, Clinton Edwards, Jessie Mullinax, Opal Coon, E. M. Rowe Estate, by Wayne Rowe, Adm. (Mae M. Rowe, Wanne Rowe & Edith Weidge), Carrie C. Dixon, Offie Lindsey, Grace Maude Lindsey, L. A. Davis & Marie M. Davis, T. B. Walker, Mary A. Farris, L. N. Davis, Winifred M. Prentice, now Graney, Eugene L. Prentice, Maxine Ruth Prentice, John C. Prentice, Ida B. Rivers, Dorothy McClaran, Max E. McClaran, George A. McClaran, Maurice McClaran, Protestants in the above styled and numbered cause, have separately filed herein their separate written notice of intention to appeal to the Supreme Court of the State of Oklahoma from the order of this Commission rendered herein on the 5th day of September, 1947, granting the application and petition for unitization herein and said Protestants have separately requested this Commission to certify the entire record in this cause to the Supreme Court of the State of Oklahoma, as prescribed by law.

Now, therefore, it is ordered by the Commission that said appeal be granted and that the Secretary of the Corporation Commission of the State of Oklahoma cause the entire record in this case to be transcribed and submitted to the Chairman of the Commission for certification at the earliest possible date.

Done at the office of the Corporation Commission of the State of Oklahoma, Capitol Office Building, Oklahoma City, Oklahoma, this 5th day of September, 1947.

[fols. 1806-1807] Corporation Commission of the State of Oklahoma, by (s) Reford Bond, Chairman; Ray O. Weems, Vice Chairman; Ray C. Jones, Commissioner.

Attest: (s.) Tom McMurray, Secretary. (Seal.)

[File endorsement omitted.]

[fol. 1808] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title omitted]

APPLICATION FOR CERTIFICATION OF FACTS AND RECORD TO THE SUPREME COURT—Filed September 5, 1947

Comes now the Protestant, The Palmer Oil Corporation, and represents and shows that it desires to appeal from the order of this Commission entered herein on the 5th day of September, 1947, to the Supreme Court of Oklahoma as provided by law, and it therefore respectfully requests that the Chairman of this Commission certify to the Supreme Court of this State, under the seal of the Commission, and transmit to the Clerk of said Court to be filed with the record in this case, all of the facts upon which said order is based, together with all evidence introduced before considered by the Commission in the hearing of this cause and in making said order, including a written statement of the reasons upon which the action of the [fols. 1809-1810] Commission in making said order is based, together with a copy of said order and a copy of each and all of the pleadings, applications, protests, motions, rulings, exceptions, and all other matters and things filed in said cause.

The Palmer Oil Corporation, Protestant, by Monnet, Hays and Brown, by (s.) Coleman Hayes, Oklahoma City, Oklahoma; Adams, Jones and Robinson, by (s.) Mark H. Adams, Wichita, Kansas, Attorneys for Protestant.

[File endorsement omitted.]

[fol. 1811] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title omitted]

APPLICATION FOR SUPERSEDEAS OF PALMER OIL CORPORATION —Filed September 5, 1947

Comes now the Protestant, the Palmer Oil Corporation, and respectfully requests the Corporation Commission to

fix the terms and amount of a suspending or supersedeas bond to suspend the operation of Order No. 20289 of the Commission made herein on the 5 day of September, 1947, pending disposition of the appeal therefrom to the Supreme Court of Oklahoma.

The Palmer Oil Corporation, Protestant, by (s.) Coleman Hayes, Oklahoma City, Oklahoma; Adams, Jones and Robinson, by (s.) Mark H. Adams, Wichita, Kansas, Attorneys for Protestant.

[File endorsement omitted.]

[fol. 1812] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

PROCEEDINGS UPON HANDING DOWN OF AN OPINION—September 5, 1947

[fol. 1813] Chairman Bond: Gentlemen, the Commission will hand down in open court an opinion in the West Cement unitization case which is C. D. 1308.

After 24 days of hearing, the Commission today granted the application of 94 per cent of the operators in the West Cement Medrano Pool, adopting a plan of unitization for the entire pool. The pool comprising approximately 37,000 acres, containing 37 oil wells and 19 gas wells is known as a gas expansion dry pool. The testimony indicated that under present competitive methods of operation only 25 per cent or 24 million barrels of oil would be ultimately covered, but under unitization management an additional 25 per cent or 25 million barrels of oil could be recovered for royalty owners and lease holders.

Testimony further showed that unless the pool was operated on a unitization plan, the correlative rights of the various operators and owners who owned an interest in the gas cap where gas only is produced, would be adversely affected and it was these facts which moved the Commission to grant the application unitizing the entire field.

[fol. 1814] Reford Bond, Jr.: To which order, the royalty owners as they appear by name in the proceedings and pleadings and Tom Potter, owner of oil and gas leasehold estate, Clyde Kahle, owner of an overriding royalty and Bob White Oil Corporation, owner of an overriding royalty except and announce their intention to appeal from the Order of the Corporation Commission of the State of Oklahoma to the Supreme Court of the State of Oklahoma, and ask that the proper notation be made on the Docket of the Corporation Commission, of such notice of intention to appeal and ask that time be allowed for the making and filing of transcripts.

Chairman Bond: How much time do you ask, a different rule applies to oil and gas cases as what applies in other cases. Under the general Order you are allowed six months for other cases, but in oil cases you are only allowed 60 days.

Reford Bond, Jr.: We request the regular time allowed by statute.

Chairman Bond: The regular time, 60 days as allowed by statute.

Jack Page: We want to give the same exceptions and notice of intention to appeal as far as B. E. Johnson, and [fol. 1815] M. L. McIntyre and Virginia McIntyre.

Motions to Set Aside Findings of Fact and Conclusions of Law and Denial Thereof

Mark Adams: The Protestant, Palmer Oil Corporation, excepts separately to each of the findings of fact and conclusions of law contained in the Order of the Commission, of this Order on this Date, and excepts each and every line of the Unitization Plan as adopted by the Order of the Commission, and we would like for the record to so show. In addition, the Palmer Oil Corporation moves to set aside findings of fact and conclusions of law made by the Commission in this matter, this day, and in lieu thereof to make further findings which are as follows: First: That the production of oil and gas from the Medrano oil and gas bodies in the West Cement Oil Field in Caddo County, Oklahoma, is now being had without waste, the same being had in accordance with the Rules, Regulations and Orders

of the Corporation Commission of the State of Oklahoma. Second: The Medrano Sand Horizon in the West Cement Oil Field in Caddo County, Oklahoma, is completely separated into two or more common sources of supply from and between which there is no communication of oil or gas, by reason of the presence of faults extending through such horizon constituting sealed barriers. Third: That the [fol. 1816] West Cement Oil Field in Caddo County, Oklahoma, in which the Medrano Sand body lies in separate segments, is a field in which oil was discovered in commercial quantities and produced in the year 1918, and at all times subsequent thereto. Fourth: That unitized management, operation and further development for and of oil and gas from the several separate common sources of supply thereof in the Medrano sand in the West Cement Oil Field in Caddo County, Oklahoma, will not substantially increase the recovery of oil and gas therefrom, or decrease the time in which the same will be recovered, adequate conservation measures now in force and effect being continued in force and effect by the Corporation Commission of the State of Oklahoma in respect thereto. Fifth: That the plan of compulsory unitization here proposed is not feasible. Sixth: That under operations which might be conducted by virtue of the adoption of the proposed plan here under consideration, the value of the oil and gas which might be produced from the Medrano Sand in its several, separate common sources of supply would not be sufficiently in excess of that which would be produced in the normal operations with respect to said Medrano Sand to equal the [fol. 1817] cost of the operations under such compulsory unitization. Seventh: That the compulsory unitization under the plan here proposed is not for the common good of all interested parties. Eighth: That the proposed plan of compulsory unitization here under consideration is inequitable and unjust. Ninth: That the proposed plan of compulsory unitization here under consideration, if adopted, would effect the taking of property of certain royalty and lease owners and give it to others without just compensation. Tenth: That the proposed plan of compulsory unitization here under consideration would, if adopted, include areas which have not reasonably been defined by actual drilling operations. Eleventh: The division of interest or

formula for the apportionment and allocation of the purported unit production among the several separately owned tracts within the proposed unit area under the plan of compulsory unitization here proposed, if adopted, is not fair, reasonable or equitable. Twelfth: The division of interest or formula for the apportionment and allocation of the purported unit production between the owners of interests within separate tracts within the proposed unit area under the plan of compulsory unitization here proposed, if [fol. 1818] adopted, is not fair, reasonable or equitable. Thirteenth: That the plan of compulsory unitization here proposed, if adopted, makes no provision for the adjustment or change of the division of interest or formula for the apportionment and allocation of purported unit production in the event the results of actual future drilling operations establish that such adjustment or change should be made. Fourteenth: That the plan of compulsory unitization here proposed does not give adequate weight to the location on structure of the several separate tracts within the proposed unit area. Fifteenth: That the plan of compulsory unitization here proposed, if adopted, fails to use as a factor the essential factor of the ability of the several presently drilled and operating oil wells to produce from the Medrano Sand bodies. Sixteenth: That the plan of compulsory unitization here proposed fails to use as a factor the essential factor representative of the different lifting costs of oil being produced from the several tracts from the several bodies of Medrano Sand. The Corporation Commission of the State of Oklahoma makes the following Conclusions of Law in Cause C. D. No. 1308: That the petition filed herein and the amendment thereto, and the evidence [fol. 1819] presented in support thereof, do not establish that it should be granted under the provisions of *O. S. Supp. 1945, Title 52, Chapter 3, Sections 286.1 to 286.17*, both inclusive, and should, therefore, be denied. If the Commission please, we would like to have a ruling on our motion.

Chairman Bond: Very well.

Reford Bond, Jr.: We desire to join in the motion of the Palmer Oil Corporation.

Chairman Bond: Let the record so show.

Jack Page: Likewise, we would like to join in the motion.

Chairman Bond: Gentlemen, would you like to be heard? Mr. Williams, would you like to say something?

R. M. Williams: I don't know that there is anything I could say except his motion is in direct conflict with the order of the Commission, if the Commission's order is correct, then this motion should be denied, if it's correct, if this motion is correct, then it should be granted and the Commission's order is no good. That is the issue of the lawsuit.

Chairman Bond: Mr. Green, do you have anything to say?

Floyd Green: I agree with Mr. Williams, since the Commission has adopted the conclusions of law, these are en- [fol. 1820] tirely different from what he proposes in the motion of the Palmer Oil Corporation and the motion should be overruled.

Chairman Bond: The Commission denies the motion of counsel, and exceptions are allowed.

Mark Adams: We offer in evidence this Motion as Exhibit 123, and ask that it be admitted. We will file a copy of this with the Commission. We offer this document as Exhibit 123.

Chairman Bond: Received, denied and exceptions allowed.

Motion to Set Aside Order and Denial Thereof

Mark Adams: At this time, if the Commission please, in behalf of The Palmer Oil Corporation, Protestant, we herewith would like to make the following motion: Comes now the Protestant, The Palmer Oil Corporation, and moves the Commission to set aside, vacate and hold for naught the Order made in the above entitled cause on the 5th. day of September, 1947, said Protestant being aggrieved thereby, and to grant a new trial of said cause for the following reasons and causes which affect materially the substantial rights of said Protestant: 1. That said Order is not sustained by sufficient evidence. 2. That said Order is contrary to the evidence. 3. That said Order is contrary to [fol. 1821] law. 4. Errors of law occurring at and during the trial duly excepted to by Protestant.

Chairman Bond: Very well, do you gentlemen wish to join in on this motion?

Reford Bond, Jr.: We wish to join in the demurrer.

Jack Page: We also join in the demurrer.

Chairman Bond: Let the record so show.

Mark Adams: We would like to offer this motion of new trial as Exhibit 124 and ask that it be received.

Chairman Bond: Received, notice for new trial denied and overruled, exceptions allowed.

PROCEEDINGS RE NOTING OF APPEALS AND FIXING BONDS

Mark Adams: We would like the record to show that on behalf of the Protestant, the Palmer Oil Corporation, of its notice of intention to appeal to the Supreme Court of the State of Oklahoma and for the order be entered this day in this Cause by the Commission on its docket and request that such Notice of Appeal be duly entered upon the Docket of the Corporation Commission as required by law.

Chairman Bond: Request granted and let the record so show accordingly.

Mark Adams: Notice of Appeal in this instance has been marked by the Reporter as Exhibit 125 and we would like [fol. 1822] to have that admitted in evidence.

Chairman Bond: Received.

Mark Adams: Your Honors, please, we prepared an order for a journal entry overruling the motion for a new trial which, if it's agreeable and Commission's counsel here would like to examine same, we would like to have the Commission sign it if everything is in order.

Chairman Bond: Very well, let counsel examine the Order and bring it to the desk and we will sign it now.

Mark Adams: We have also prepared a journal entry, an order for the signature of the Commission allowing the appeal and we would like to have counsel examine that.

Chairman Bond: Very well, send that up here to the bench after counsel has examined it.

Mark Adams: If the Commission please, the application of the Palmer Oil Corporation, Protestant, ask for certification of facts to the Supreme Court and has been identified as Exhibit 126 and we would like to have this admitted in evidence.

Chairman Bond: Received.

Mark Adams: If the Commission please, Protestant having given notice of appeal to the Supreme Court of the [fol. 1823] State of Oklahoma, the Protestant, The Palmer Oil Corporation, at this time would like to file application before the Corporation Commission of the State of Oklahoma to fix the terms and amount of suspending or supersedeas bonds to suspend operation of Order 20289, that the Commission made herein on the 5th day of September, 1947, pending appeal therefrom to the Supreme Court of Oklahoma and we would like to show the admission of this application as Exhibit No. 127.

Chairman Bond: Received.

Reford Bond, Jr.: We desire to join in the application of the appeal of the Palmer Oil Corporation to fixing supersedeas bond.

Chairman Bond: Let the record so show.

Jack Page: We also join in that request.

Floyd Green: We will have to take testimony on that, a time should be fixed, they can do that, they are entitled to take testimony.

Chairman Bond: The Commission will hear you on the law now and we will hear testimony at any time.

Floyd Green: They have a right to supersede the order, it's the amount that has to be fixed, I think that you should take some testimony on it before you fix the amount.

[fol. 1824] Chairman Bond: The Commission would like to act as promptly as possible and the Court Reporters are working every day in court and have to make a record at night and if the sixty days expire, they have no jurisdiction and would have to go to the Supreme Court for additional time, you might save the trouble by having an early hearing and not having to go to the Supreme Court for time in addition to the sixty days.

Floyd Green: Under House Bill 339, the Order cannot become executive for sixty days, prior to that time we should have an early hearing.

Chairman Bond: Call the secretary and we will look at the docket and if he wants an early hearing, we will give you one and we will defer all other cases and give this case the right-of-way. Counsel may ask today that the record

be prepared and the Reporters prepare same as quickly as possible. (To the Reporters) Observe all requests and prepare the transcript as rapidly as possible and come within the sixty days and you are instructed that, if it is not possible to have the record ready, please advise counsel in [fol. 1825] plenty of time so that they can go to the Supreme Court and get additional time for preparing the record.

Mark Adams: If the Commission please, the Commission will recall that there are a great number of exhibits in this case and I believe that there were a great many exhibits concerned with the records that were not necessary, but were for merely the purpose of refreshing the witnesses memories and perhaps a great deal of time would be saved and some expense from this if it were possible for the counsel to stipulate as to various exhibits that would not be necessary to take to the Supreme Court; of course, we want to have a full and complete record, but there are a number of duplications in the exhibits which were used for the purpose of refreshing witnesses memories, and, of course, we want to be sure and have all the essential exhibits that should be included in the record. If that is agreeable with the Commission and Counsel for other protestants, we would like to have an opportunity to reach such a stipulation.

Chairman Bond: The Commission will respect any stipulation that you make with other counsels and you can prepare your record as economical as possible.

[fol. 1826] Mark Adams: We want it to be complete, but I do believe that there are some exhibits concerning which there was oral testimony and probably these particular exhibits are not essential to the record.

R. M. Williams: We will work with you every way possible.

Reford Bond, Jr.: If the Commission please, I didn't want to interrupt Mr. Adams awhile ago when he was offering his various motions. I would like at this time to give notice of appeal for my client from the Order of the Commission of overruling the motion for a new trial and the royalty owners as they appear in the pleadings and Tom Potter and Clyde Kahle and Bob White Oil Company hereby give notice of appeal from the Order of the Cor-

poration Commission overruling their motion for a new trial to the Supreme Court of the State of Oklahoma and request that proper entry be made on the proper docket of the Corporation Commission showing their intention to appeal and that an extension of sixty days be allowed for the filing of a transcript.

Chairman Bond: Let the record so show and that counsel gave notice of appeal after the Order of the Corporation Commission was given and counsel gave notice of appeal after a motion for a new trial was denied.

[fol. 1827] Jack Page: Let the record so show as to Johnson and McIntyre.

Chairman Bond: Hearing on testimony for fixing a bond has been agreed upon by counsel and set by the Commission for October 2, 1947 at 10:00 o'clock a.m.

Is there anything further in this matter?

Reporter's Note: Whereupon, all parties announced nothing further.

Chairman Bond: The Commission will close this case and we will have further hearing on October 2nd as to the fixing of Supersedeas Bond.

[fol. 1828] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title omitted]

TRANSCRIPT OF HEARINGS ON FIXING SUPERSEDEAS BOND

On October 2, 1947, at 10:00 a.m., this cause came on for further hearing upon the application of the protestants, Palmer Oil Corporation, for the Oklahoma Corporation Commission to seek Supersedeas Bond in this cause for application to the Supreme Court of the State of Oklahoma. The Oklahoma Corporation Commission is in session in the Court Room, Capitol Office Building, Oklahoma City, Oklahoma, all members being present.

The parties appeared as follows: Mark H. Adams, Wichita, Kansas; Coleman Hayes, Oklahoma City, Oklahoma for Palmer Oil Corporation; R. M. Williams, Russell G. Lowe, W. H. Brown, and Booth Kellough, attorneys

being present and appearing for the applicants in the proceedings; Floyd Green, appearing for the Oklahoma Corporation Commission.

The following proceedings were had, to-wit:

[fol. 1829] Vice Chairman Weems: Gentlemen, you may proceed.

Mark H. Adams: If the Commission please, we are in a position to offer testimony to show that there will be no loss or damage due to the Supersedeas Bond, we are not sure what disposition the Commission will be or what you would like to have presented. It is our belief that here is a new law which is untried and unquestioned, but what it substantially effects their valuable property rights, it's our belief that the Commission certainly feels that we are sincere in our belief that the law has no proper application. Nor does the plan that the Commission has approved to the Medrano sections of the West Cement field, and that when we say that we are going to appeal promptly to the Supreme Court of the State of Oklahoma, from the Commission's order, we believe that we are entitled to be believed that we are sincere in our position and intend to proceed diligently to ascertain from the court determination, subsequently the only bond that should be required in this undertaking should be one that will assure the payment of the costs and the further assurance of good faith on our part. If the Commission feels that there is any question about our sincerity, or if the Commission feels that it cares to have evidence submitted, we will be glad to submit it, but we don't wish to uselessly take the time of the Commission unless such evidence is [fol. 1830] desired.

Commissioner Weems: Mr. Green, will you state the position of the Commission.

Floyd Green: As I understand such a supersedeas bond, that is a bond to make those persons protected that might be damaged. In event the order is set aside, I don't know the proponent's position and you should try to measure and assume that it will be a year before this lawsuit is settled in the Supreme Court. The purpose of supersedeas is to see that no one is hurt. It's the question of the Commission as to who could be hurt and the amount of time that you

assume that the court will pass on the case. If no one is hurt, then, the bond could be nominal.

Mr. Williams: There is no question about the sincerity of Mr. Adams or his client, Mr. Tom Palmer, and Mr. Adams here, we assume that they are sincere, but after weeks of hearing the Commission has said that unitization is for this pool. A great deal of proof has already been introduced as to amount of oil and gas and amounts that will be lost if that method of operation is not adopted. The record in itself is sufficient to show great damage of any delay of unitization. We know that Mr. Palmer is sincere in his desire to appeal, nevertheless it's been determined by the Commission that unitization is the proper method of operation. The proponents should have protection from the damage that they will suffer by reason of the [fol. 1831] appeal. If Mr. Palmer is correct, and the Commission's order is subject to reversal, of course there is no liability under the bond, but if he is not correct, as this Commission has already found, then he should support his sincerity by some financial guaranty by a good bond. Other parties will be damaged, but his sincere efforts should not enter into it. We are in a position to show that any delay will institute damage on the part of the pool. That is the purpose of the supersedeas bond and the law contemplates that the parties would appeal. He should post a bond to protect the other parties from damage that they might sustain. I see no option, you must fix an amount that will protect the other parties, that is what the hearing is about today, of course, these parties throughout the hearing asserted that there will be no damage if we never adopt unitization of the pool. They say that in the law there is no damage. The Commission had already ruled against them on that basic contention.

[fol. 1832] Whereupon, HENRY KEPLINGER, of lawful age, being first duly sworn, testified as follows, to-wit:

Witness examined.

By Mark H. Adams:

Q. State your name, please, sir.

A. C. H. Keplinger.

Q. You are the same Mr. Keplinger who is a petroleum engineer and geologist and testified in this hearing in chief, are you?

A. Yes, sir.

Q. I assume that the Commission will not require qualification of this witness.

Commissioner Weems: That is right.

Mr. Williams: We admit his qualifications.

Mr. Adams continues with the witness:

Q. Mr. Keplinger, do you have an opinion as to whether or not the production now being had under present operations of the Medrano sand sections in the West Cement pool in Caddo County, Oklahoma, is being had without waste?

A. I do.

Q. Will you state what that opinion is.

A. That the operation of the West Cement Medrano field is not being operated without waste under the present order of the Corporation Commission.

Q. State if you know whether or not the reservoir pressures in the gas and in the oil zone of the Medrano sections in the West Cement field are being maintained at this [fol. 1833] time under the present orders of the Commission in equalized positions.

A. In June, effective June 5th, the Commission made an order which reduced the gas allowable from the gas wells in the Medrano sections of the West Cement pool from some 26 million cubic feet per day. On May 2nd 4,408,000 barrels per day. In June, and since June 1st, has maintained allowable at 4,408,000 cubic feet per day, as a result of this reduction in gas allowable, the voidage from the gas area is reduced approximately 5.5 times and on the basis of the present allowable from the oil zone in the Medrano section

of the West Cement field, the voidage of gas in the gas cap and the voidage of oil from the oil zone is approximately the same. It means that in the gas area the present volume of production is the same approximately as the oil removal from the oil sections so that there can be no removal waste of oil by movement underground into the gas section, as might have previously existed. The greatest damage in what approximately equal voidage in the gas area and from the oil area is for the gas-oil contact to move downward, the gas to move downward into the oil section because the gravity damage, effect the specific gravity or the distance of the oil is so much greater than comparable volume of gas under present reserve pressures that the area would move downward, and therefore it would be impossible to have any waste of oil by movement into the gas zone.

Q. Accordingly, if I understand your statement, Mr. Keplinger, and your opinion, to summarize it is, as long as [fol. 1834] oil and gas is produced from the Medrano sand sections in accordance with present orders of this Commission, and assuming that these orders are maintained, all recoverable oil that might be reasonably expected to be recovered will be recovered without waste, is that correct?

A. That is correct.

Q. Now you are not, when you make that statement, you are not taking into consideration the tail end, so to speak, that might be recovered if there is water injection, is that right?

A. Yes, sir, that is correct, or the time that will be required.

Q. Now as to the time that will be required under present operations, what other elements should be considered in determining the time factor, if any, is it a question of further development?

A. Yes, sir.

Q. The Commission has records showing the weighted average pressure drop in this area for each month, does it not, from the operations, is that correct?

A. Yes, sir, the Commission each month published the gas allowables for the individual wells and for the period they have taken gas pressure tests on each producing gas well in the Medrano sections.

Q. Do you have, for the months of August and September, 1947, the reports of this Commission in that respect?

A. I do.

[fol. 1835] Q. I hand you then what the reporter has marked and identified as exhibits, handing you Exhibits 128 and 129, will you state what these two exhibits are, please, for the record?

A. These exhibits were obtained from the Conservation Department of the Corporation Commission, Exhibit 128 is the gas allowable report for August, 1947. It listed the wells, the acreage attributed to each well, the potential, the pressure as determined by the Corporation Commission and the allowable, the same information is shown on Exhibit 129, but for the month of September.

Q. 1947?

A. 1947.

Mark H. Adams: We offer as evidence Exhibits 128 and 129.

Chairman Bond: Received.

Mark H. Adams continues with the witness:

Q. Referring to exhibits 128 and 129, have you made the computation as to the per cent and drop of weighted average pressure with respect to production of the Medrano sand section for 30 days?

A. I have.

Q. Will you state what that approximate is.

A. The approximate per cent is approximately 2¾ths of 1 per cent drop in pressure.

Q. The pressure as of September report, Exhibit 129, is what amount, is it 880 point what?

A. The weighted pool pressure in September in the September report is 688.9536 pounds.

[fol. 1836] Q. In your opinion, the drop for thirty days, is what per cent, what part of one per cent?

A. Approximately ⅔rds of one per cent, that is, between the August pressures which had a weighted average of 693.1432 pounds and the September weighted average pressure of 688.9536 pounds.

Q. In your opinion, is that an appreciable drop or not?

A. The drop is approximately 4 pounds per month and

over one year's time it will be approximately 50 pounds for one year's time.

Q. Will that, in your opinion, result in the loss of any recoverable oil of the Medrano sand section that might otherwise ultimately be recovered?

A. There might be some loss, but it would not be appreciable.

Q. You made a study as an engineer, did you not, of the gas withdrawals per barrel of oil from the Medrano section of the West Cement field, as is all the same factors in relation to production in the West Edmond pool?

[fol. 1837] A. Yes.

Q. I wonder, for the benefit of the Commission, if you would state the difference in respect to the amount of gas produced, per barrel of oil, in the two areas I have just mentioned.

A. In the West Edmond Hunton Lime Pool the original gas-oil ratio was between 900 and 1000 cubic feet of gas per barrel of oil.

Q. Now, when you say "ratio," you mean that much was produced——

A. That much was produced and that much had dissolved, was dissolved in each barrel of oil in the reservoir. The production of the West Edmond Pool, at the present time, has resulted in the production of such a quantity of oil as to deplete the reservoir to the point where at the present time the average gas-oil ratio will approximate 7500 to 8000 cubic feet of gas per barrel of oil. That means that each barrel of oil that is being produced, in addition to the amount of original gas that was in that barrel of oil, is producing along with it a large volume of gas from other barrels of oil that are not being produced.

Q. That's in the West Edmond Pool?

A. Yes.

Q. Now, tell us about the Medrano sand section.

A. In the Medrano sand section we have between 425 and 570 cubic feet of gas dissolved in a barrel of oil originally,— in the Medrano section of the West Cement Field we have approximately half of the amount of gas dissolved in each [fol. 1838] barrel of oil that we had originally present in the West Edmond pool. The production from the Medrano

section of the West Cement Field, as of October 1, 1947, is approximately 8,550,000 barrels of oil. With the production of this large volume of oil there would be little or no increase, there has been I should say,—little or no increase in the gas-oil ratio in the later wells. The last survey made by the Corporation Commission indicates that at the present time each barrel of oil being produced from the oil zone is producing its original volume of gas that was contained in the oil when the field was discovered, so that there is no oil being produced in the Medrano section of the West Cement field, and gas which isn't,—the production of oil is not robbing gas from oil which is not being produced.

Q. Will you state to the Commission, briefly, in your opinion, the effect, if any, on the viscosity of the oil from the Medrano section by the continuation of operation under the present order of the Commission.

A. The viscosity of the oil in the Medrano reservoir, at 120 degrees Fahrenheit, would probably not be appreciably changed according to laboratory, precision instruments. The original viscosity was approximately 1.8 centipoise from which—the reduction of pressure of the viscosity has increased over the period of a year. The increase in viscosity in the Medrano section over a period of a year would hardly be appreciably measurable.

Q. You mean there would be no material change?

[fol. 1839] A. In the oil viscosity.

Q. What effect does the viscosity of the oil have in the production of oil in the Medrano section?

A. The viscosity has this relationship, in common terms, —the higher the viscosity the more energy will be required to push the oil through the formations.

Q. In your opinion, the viscosity in this particular effect, has not changed in any appreciable amount?

A. No, and will not under the present gas allowable and oil allowable of the Commission. That's assuming that your present conservation measures will be maintained and those conservation measures have been in effect ever since June 1st of this year.

Cross-examination.

By Mr. Williams:

Q. Mr. Keplinger, your testimony here today is substantially a restatement of your testimony at the hearing and that no loss is to be sustained in this field even if we never got unitization,—is that correct?

A. No, that isn't exactly right.

Q. You testified at that time that no advantage would be obtained from unitization, in any event.

A. That's correct.

Q. And your testimony is today that since no advantage will be gained through unitization then there will be no loss through its delay?

A. No, that isn't my testimony.

[fol. 1840] Q. I believe you testified that in the West Edmond field a large amount of oil is being robbed of its gas by reason of high ratios?

A. That is correct.

Q. What did you testify was the average ratio in that field?

A. At the present time?

Q. Yes, you gave some figures.

A. After the original dissolved gas was between 900 and 1000.

Q. Well, what was the gas-oil ratio in the month of September of this year?

A. I estimated the average gas-oil ratio last month,—I have the calculations here, but I don't think I have September figures, but at the end of July or August, it was approximately 7500 to 8000 cubic feet of gas per barrel of oil.

Q. Do you know what the gas-oil ratio of the West Edmond field is today?

A. No, I don't.

Q. As a matter of fact, don't you know that the gas-oil ratio is approximately 3000 cubic feet of gas per barrel of oil per day, under unitization?

A. I don't know, I haven't checked it.

Q. In the West Edmond field, you testified that there would be no advantage resulting from unitization?

A. That's correct.

Q. And you say the reduction of the gas-oil ratio from approximately 7000 or 7500 to 3000, today, under unitization [fol. 1841] is no advantage?

Mr. Adams: We object to that as not proper cross examination.

Mr. Williams: We'll withdraw the question,—that's all.

Mr. Adams: That's all.

Witness excused.

[fol. 1842] HERMAN H. KAVELER, called as a witness, being first duly sworn, testified as follows:

Direct examination.

By Mr. Williams:

Q. State your name.

A. My name is Herman H. Kaveler.

Q. You are the same Mr. Kaveler who has testified on previous occasions in this matter?

A. Yes, sir, I am.

(Mr. Williams addressing Mr. Adams:) Will you admit his qualifications?

Mr. Adams: Yes.

Q. Mr. Kaveler, have you made any calculation as to the probable loss that will result to the operators and royalty owners in the West Cement Medrano field as a result of delay in the proposed program of unitization?

A. I have.

Q. I wonder if you will state briefly, to the Commission, the result of those calculations.

Mr. Adams: We object unless it is restricted solely to the amount the operators and royalty owners will lose, we are not interested in what the Phillips Petroleum Company will lose by reason of delay in the program,—but we are interested in the loss of recoverable oil.

Mr. Williams: We'll exclude that,——

Q. And please exclude, Mr. Kaveler, any profit the Phil-
[fol. 1843] lips Petroleum Company will make by reason of being the operator.

A. (Witness goes to blackboard) The analysis I have made of the loss that might result from delay in beginning the unitized operation is based on the following facts which I desire to summarize as a predicate for the estimate,—If the field is not operated as a unit, I mean.

There are 19 gas wells in the field. Taking your current allowable, in excess of 4 million cubic feet per day and proceeding on the theory that during the course of the delay the Commission will not increase that allowable, and if gas is worth 5 cents per thousand, and if gas were produced or sold from the field that amount represents the volume of gas which will have to be repurchased and brought back by the operators and put back into the ground at a cost, say, that gas is worth to the operator ten cents per thousand cubic feet. There is an estimated loss to the operators of gas representing a value of 400 dollars per day. There are 33 oil wells in the field, three of which are Palmer's, so there are 30 wells not Palmers, each of which produce about 1800 barrels. There is approximately 4 million cubic feet of gas. The field is producing today about 480 barrels of oil, if the field were operated as a unit that could be increased to 1200 barrels of oil per day. The 1200 barrels of oil loss on hand, which is valued at $2,000.00, there would be a loss of approximately $2,000.00 in oil income.

Q. Now, you referred to oil in the hands of the opera-
[fol. 1844] tors,—does that include also royalty oil?

A. Yes, that includes royalty oil,—eighth-eighths of the oil, seven-eighths to the operator and one-eighth to the royalty owner. Now, to be fair about this analysis, let's assume that this $2000.00 wouldn't be lost forever, but would be delayed, and let's say 25 per cent of that figure and see,—that would be a present loss of $500.00 a day in oil. Now, when these figures are totalled there is a loss of $1150.00 a day of real money,—income to the operators and income to the royalty owners. Calculating the monthly price of gas at approximately $34,500.00, and if one wishes to spread the total loss over ten months—there would be a loss for ten months from that source of income of $345,-

000.00 and in twelve months it will be $414,000.00. Taking into account the present loss and taking into account the gas that would have to be repurchased and reinjected into the ground in order to maintain pressure for the proposed unit operation. Now, one may wish to look at it from this standpoint,—that 95 million barrels of oil is the oil in that pool,—about 7 million barrels have been produced,—that the unitized operation will produce 17 million barrels,—the testimony in the hearing indicated that if unitized, the recovery would be 24 million barrels, minimum. I am sure that it would be 50 million barrels. To unitize, it is necessary to maintain pressure, so if a delay of 12 months is had the present operation might be charged with a loss of some part of 50 million barrels. One might say that [fol. 1845] the loss of 50 million barrels or a part of 50 million barrels is a percentage figure. Say, if it were 1 per cent, it would reach 500,000 barrels of oil in addition to the direct financial loss of 1000 barrels a day. If one were permitted to use the figure of $2.00 per barrel, there would be 2 million dollars in twelve months, that amount would be about $414,000.00,—take $414,000.00 in twelve months . . .

Cross-examination.

By Mr. Green:

Q. Then it is your opinion that a year's delay will actually result in a loss of a half million dollars?

A. Between $500,000 and $700,000, yes, sir.

Q. That figure you used of ten cents for the gas,——

A. Yes, Mr. Green, that's the cost of the gas, I mean the purchase price and the reproduction of the gas in the ground.

Q. Well, shouldn't you take that from that $414,000 figure, the amount you would get for that gas for the period?

A. That's probably right,—if that's right.

Q. This $2,000 daily,—assuming you wouldn't lose that, that you would eventually get that oil, even though it was delayed a year,—if you should, instead of taking 25 per cent, if you should merely add in the interest costs rather

than $500,—don't you think that would be more nearly correct?

A. I don't think so, because the cash in hand to the operators and royalty owners would represent a greater value than the present six per cent interest figure.

[fol. 1846] Q. That is assuming that you are eventually going to recover all the oil?

A. Yes.

Q. You took out 25 per cent?

A. Yes.

Q. Well, in other words, you mean the oil is needed now?

A. The oil is needed now, the oil companies need the money in order to carry on the program of drilling wells and conducting their operations.

Q. This reduction of that percentage by reason of the delay,—that might be 1 or 1½ per cent?

A. Or 5 or 10.

By Mr. Adams:

Q. It could be none too, couldn't it, Mr. Kaveler?

A. Well, I doubt anyone could believe there would be no loss.

Q. Well, I'm talking about the recovery of oil.

A. Well, if you want to ignore the expense involved, we could mine that field and get every drop of that oil.

Witness excused.

[fol. 1847] (Mr. Kaveler is on the stand and Mark H. Adams is examining.)

A. The solution of gas is around 800 cubic feet per barrel, 800 to 900.

Q. Will you write, that is Hartshorn No. 2, put it on the board?

A. Whatever you say.

Q. Do you know what the original amount of gas is per barrel in solution in the Fletcher No. 6?

A. If it is 800 cubic feet per barrel in Hartshorn No. 6, it is the same as Fletcher.

Q. That is right?

A. Assuming the initial conditions were the same.

Q. Write that down.

A. 800.

Q. What about Phillips-Oaks No. 2?

A. If it is 800 in Hartshorn No. 2, it also is in Oaks No. 2.

Q. You are hardly answering the question, do you know what it is in Phillips-Oaks No. 2?

A. Under original conditions?

Q. Do you have an opinion?

A. The bottom hole solution analysis indicates that that figure is in error and the gas in solution in West Cement Medrano field originally is about 460 cubic feet per barrel, or in that neighborhood.

Q. That is substantially different when you say 800.

A. I refreshed my memory and find the correct answer is 460.

[fol. 1848] Q. What about Phillips-Hartshorn No. 1, will you write that down, please, sir?

A. 460.

Q. Asking the same question with respect to Phillips-Oaks No. 4.

A. 460, if I understood you, Mr. Adams, you want the amount of gas in solution of each barrel of oil under original conditions of the West Cement Medrano pool.

Q. You understand that I refer to these particular leases?

A. Yes.

Q. You understand that our contention is that it is not a single pool, referring to Phillips-Margaret No. 1, will you please place that on the board and state for the record your answer.

A. Approximately 460 cubic feet under original conditions of the West Cement pool.

Q. Opposite each of those on this side (indicating to right), state if you can what the present amount of gas is as reflected in each barrel of oil with regard to those separate leases in accordance with the last Corporation Commission survey on February, 1947, I believe.

A. That answer could be easily derived.

Q. Do you know, let's get the facts. Do you know what the facts are?

A. Yes, sir.

Q. Let's just state the facts.

A. The reservoir pressures must be known of each of the wells.

[fol. 1849] Q. Let's take the measurement.

A. You want it for February, 1947?

Q. As reported by the Corporation Commission engineer.

A. I will have to get the reservoir pressures.

Q. If I read them to you would that sufficiently give the information to you, would that sufficiently refresh your memory and help you?

A. If you read the facts, yes, sir.

Q. Isn't it a fact, that in regard to the Hartshorn No. 2 it is 321 cubic feet of gas.

A. I assume that that is correct, that is solution of gas in February, 1947.

Q. Amount of gas produced?

A. Oh, gas-oil ratio, you desire to write down the gas-oil ratio of Phillips-Hartshorn No. 2?

Q. 321 cubic feet.

A. I will adopt that.

Q. Fletcher No. 6, 191 cubic feet.

A. Yes, sir.

Q. Oaks, No. 2—288 cubic feet.

A. Yes, sir.

Q. Hartshorn No. 1, 367 cubic feet.

A. I will accept that as correct.

Q. Oaks No. 4 is 351 cubic feet, Margaret No. 1, 156 cubic feet, Phillips-Fletcher No. 7, originally had gas-oil ratio of 460 cubic feet.

[fol. 1850] A. Now, that is the amount of gas dissolved under original reservoir conditions.

Q. Now, as to gas-oil ratios in February, 1947, is that approximately 312 cubic feet?

A. If your figures show that, I will accept that.

Q. We prefer, Mr. Kaveler, that you verify those figures there.

A. I verify them and they are correct.

Q. Now the last column of figures which is referred to as gas-oil ratios is the number of cubic feet of gas that is actually being produced in February, 1947, with each barrel of oil, isn't that what it means there?

A. Yes, sir.

Q. As I understand, it was testified at some length in the West Edmond Hunton compulsory unitization hearing before this Commission, how does the gas-oil ratio, with respect to the Medrano sections in the West Cement field, compare with the gas-oil ratios of oil produced in the West Edmond Hunton Lime?

A. The producing gas-oil ratios in Hunton lime is higher.

Q. How much?

A. Any figures—it could be 100 times or 1000 times or 50 times, it's ratio is on the average of 7000 to 200. It's 35 times.

Q. So that is a very substantial difference, isn't it?

A. Yes, it's a substantial difference as between the pools, every pool in the world is substantially different.

[fol. 1851] Q. And there is also a very substantial difference in the original gas-oil ratio reflecting a much greater per cent loss in the West Edmond than there is in the Medrano?

A. I can't answer that because I don't know what you mean by "reflecting a substantial loss."

Q. Well, in other words, there is proportionately a much greater increase in the proportion of gas as the gas compared against the oil produced in the West Edmond over there, which has occurred in the Medrano section of the West Cement field.

A. Yes, the Almighty Creator gave each pool an individuality.

Q. But in the Medrano section, in the West Cement, you are not robbing gas from unproduced oil in the oil which is being produced, isn't that true?

A. Well, I suppose in a narrow point of view that statement is accepted as generally correct. That doesn't go to the question as to whether that production results in waste.

Q. I believe you testified in this hearing, Mr. Kaveler, in the hearing proper, that the operations which were being conducted in the Medrano section of the West Cement field were, in all respects, in conformity with the best practices of the oil fraternity?

A. Except that they were not in conformity to unitization as representing the best practice.

Q. There was no waste occurring from operation of the [fol. 1852] Medrano sections of the West Cement field?

A. Yes, sir.

Q. Is Phillips Petroleum Company committing waste?

A. Not individually, the operators are collectively.

Q. And your company has produced more gas, as it is in proportion with the oil, than any other company has, that is the same amount of oil and the same amount of gas in that area?

A. Yes, sir, that may be a consequence of lease-ownership.

Q. You would not suppose the figures that you have on the black-board as to whether gas is being robbed from gas in place or from the present oil there.

A. I don't know the purpose of your question. I understand that Mr. Keplinger said that the gas cap has volumetric oil area and no longer moving to the gas area.

Q. Do you agree to that?

A. I think that is within a reasonable conclusion of engineering judgment with allowable set at 4 million cubic feet of gas, that is substantially correct.

Q. And if that is continued for the next year, that same situation should continue to exist, isn't that a fact?

A. The question isn't whether or not under the present allowable or value as set by the Commission as to whether gas will move toward oil or oil toward gas, the question is whether the continued production of gas will result in the ultimate recovery of oil — continued production of gas by [fol. 1853] delay will substantiate the loss of oil.

Q. With no further production of the oil-production of the Medrano sand, there would be a delay in the production of oil, recoverable oil, assuming that pressures remain.

A. If the presumption is correct,—that the presumption is not correct.

Q. You mean there will be no delay, that Phillips Petroleum Company should not drill its offsets?

A. I don't understand what you mean by that inquiry.

Q. That is all.

Mr. Williams examines the witness:

Q. You have been asked about six wells that have low ratios,—representative of all the wells in the pool?

A. No, sir.

Q. There are higher ratio wells in the pool?

A. Yes, sir.

Q. Hugh, you didn't inquire about the higher ratio wells in the pool?

A. No, sir.

Q. Are there higher ratio wells in the pool?

A. Yes, sir.

Q. I notice that Margaret No. 1 well had 460 cubic feet of gas in solution of 1 barrel of oil.

A. Yes.

Q. And presently this ratio of 156.

A. Yes.

[fol. 1854] Q. Does that mean that presently it has 156 cubic feet of gas?

A. Approximately.

Q. Each one of those barrels of oil with the 156 cubic feet had 460 cubic feet, what became of the balance of gas in each solution of barrel of oil?

A. That is taken from a barrel of oil and passed to the low pressures in the field and represents the volume of gas depleted as to pressure decline.

Q. Does that have any value as to the remaining oil?

A. Yes, if it is there.

Q. That has come about through competitive methods of operation?

A. Not necessarily competitive operations, but trying to keep oil in the pool.

Q. That is what you are trying to avoid through unitization?

A. Yes.

Mark H. Adams examines the witness:

Q. You speak about the high and low ratio wells, are the oil wells in the gas zone there?

A. Yes.

Q. They are partially gas and oil wells and partially oil and gas wells?

A. That is correct.
Q. I mean that it has gone into the gas zone.
A. There is partial movement up toward the gas, and [fol. 1855] it has probably taken a lot of the oil in the gas zone and is not recoverable.
Q. And there is none being picked up now?
A. Not if Mr. Keplinger is right.
Q. Is there any now?
A. There probably is.
Q. That is all.

Witness excused.

Chairman Bond: The Commission will recess for five minutes.

[fol. 1856] Lloyd Gray, called as a witness, being first duly sworn, testified as follows:

Examination.

By Mr. Williams:

Q. State your name.
A. Lloyd Gray.
Q. By whom are you employed.
A. The Phillips Oil Corporation.
Q. In what capacity?
A. As superintendent of production.
Q. What is your educational background?

Mr. Adams: We'll admit Mr. Gray's qualifications as production engineer to save time.

Q. Mr. Gray, your company has properties in the West Cement Medrano field?
A. Yes.
Q. Have you made a study of that field?
A. Yes, I have.
Q. And have you made a study of the benefits to be derived and of the probable loss of recovery of oil and gas to the operators and royalty owners of that pool as a result of delay in unitization of the pool?
A. I have.

Q. Will you state briefly the result of your calculations, reducing it to dollars and cents?

A. Delay in the effective date of unitization will cause a [fol. 1857] substantial amount of gas to be produced that would reduce the amount of recoverable oil left in the reservoir. There are three types of gas involved here,—I have been advised that the time loss by carrying this case to the Supreme Court would be between four months and twelve months, which would be an average of eight months. The normal allowable gas in the reservoir for that period would be 1,059,000,000 cubic feet. Placing a value on that gas, in my opinion, it should be a replacement value and not the value that would be received for the gas when it was sold. We buy that gas from gas lines, gas companies, at prices ranging from a low of nine cents to thirty-five cents per thousand. Assuming the value of nine cents, the value of gas to be purchased would be $95,310.00. In addition, the gas that would be returned from the gas company, would be at a pressure lower than would be necessary to reinject it, so that would cost 2 to 2½ cents, or $21,180.00, making a total of $116,490.00 allowable gas for a period of eight months. The underage which is accumulated over some period of time and since the reduction of the daily allowable from approximately 23,000,000 feet per day down to 2,400,000 feet per day amounts to 2,311,000,391 cubic feet, which would be reasonably expected to be made up in a year,—the total for underage gas, -46,228, with replacement gas, $254,253.00,—in addition there would be the gas produced from the oil in the oil wells, on the basis of the present allowable, 4800 barrels per day, the replacement gas at nine cents would be $186,570.00. Now, if it was unitized, we [fol. 1858] would have to take that gas and put it back in anyway, so it cannot be a proper charge, so the total of all gas re-injected into the reservoir is $557,313.00.

Q. That is gas that would not be purchased, rather if it were unitized.

A. That would be re-injected into the reservoir. Now, in addition there would be a loss of the gasoline content of the gas that would be produced with the oil and the value of that would be $25,008.00. There is another minor loss, which would be additional operating expense as a result

of competitive operation as compared with unitized operation and taking the same figures that were used in the engineering committee report, the difference would be $15,500.00.

Q. Did you make any estimate as to the loss in recoverable oil due to the delay in inaugurating the unit plan?

Mr. Adams objected to,—he hasn't said there would be any loss.

Q. Have you made a study as to whether or not there would be an increase in recovery due to unitization?

A. Yes.

Q. Have you made a study as to whether there would be a decrease in production due to delay in the plan?

A. I have.

Q. What are your figures in that regard?

A. The amount of the loss in ultimate recovery due to [fol. 1859] the time lag in starting unitization and re-injection of gas, is somewhat intangible, and I think it would be better to use a known figure or one based on judgment rather than to get into,—there is approximately 100,000,000 barrels of oil in the reservoir, about 86 of which could be probably recovered. The loss from reduction of ultimate recovery and the cost due to replacement of gas or loss of gas to the reservoir—take $507,000 for the loss of gas and $658,000 for the loss of oil,—the gasoline content is a definite loss, the operating expense and the loss in ultimate production, a total of $698,598.00. In addition to that there is also the loss Mr. Kaveler mentioned in present production out there.

Q. Everything considered, would you say that $500,000 to $600,000 loss would be a fair estimate?

A. The total loss would be right at one million dollars.

Examination.

By Mr. Adams:

Q. There are several other producing horizons in the West Cement field, are there not?

A. Yes.

Q. Do you know what they are?

A. One is the Marchand.

Q. And the Kistler?

A. I don't know about that one.

Q. Do you know what could be produced in gas from those horizons?

A. No, I do not.

[fol. 1860] Q. Do you know that the gas produced from these other horizons is selling at 4 cents per thousand cubic feet?

A. That's reasonable.

Q. So your price of 9 cents per thousand is rather high, is it not?

A. I don't know of any contract that is,——

Q. Well, don't the proponents know here, who know the Medrano,—don't they know,—don't they own these other horizons?

A. I don't know anything about their sales of gas.

Q. You don't know that.

A. I don't know,—on this 9 cent gas, I figure that the volume of it would have something to do with it and they would say between 9 and 20 cents per thousand to insure a supply, otherwise I don't think there would be a sure supply.

Q. Did you say that you are familiar with the capabilities of the various well that are producing from the oil zones in the Medrano section, sufficient to testify in respect thereto?

A. I don't believe I testified to that.

Q. Isn't it a fact, Mr. Gray, that there are several wells producing from the oil zones that are capable of producing a substantial amount of gas in excess of the allowable?

A. That's right.

Q. Do you think it would be a good idea if the Commission reduced the gas-oil ratio on those combination wells in this field? And save for the field a very great amount of [fol. 1861] the gas which is now being produced from those wells?

A. I don't think that would be legal.

Q Well, forget that part of it.

A. Well, there are several things—correlative rights to consider in the interim period,——

Q. Don't you think a gas-oil ratio of 1800 cubic feet of gas to the barrel of oil would be proper.

A. 1800 is probably higher than——

Q. Don't you think it should be reduced?

A. Considering the correlative rights and all other conditions, I don't think it should be.

Q. You put correlative rights above waste, do you?

A. Well,——

Q. You have the viewpoint that waste shouldn't be reduced?

A. Well, if this thing is going to be put through,——

Q. Well, forget that,—do you think that under normal operation of the Medrano sand it should be reduced to prevent waste?

A. I think it should be unitized.

Q. Forget the unitization,—if there was no unitization, do you believe the gas-oil ratio under the present order in the Cement Medrano field should be reduced?

A. Under present circumstances, I don't think so.

Q. You don't think there is waste there now?

A. Yes, there is waste.

Q. You don't think it can be avoided?

[fols. 1862-1863] A. It is reasonable to avoid it under the circumstances.

Examination of Witness.

By Mr. Williams:

Q. Mr. Gray, do you have an opinion as to what would be a reasonable amount of bond in this case to protect against this loss?

Mr. Adams: Just a minute, we object to that as an attempt to invade the province of the commission.

Chairman Bond: I think you invaded the province of the Commission when you put that question to him, when you asked him about the gas-oil ratio,—you may answer.

A. I have stated above the total of the loss under the three items, gasoline content, loss of ultimate recovery and operating expenses,—keeping in mind that we have thrown out all the gas figures, I think a reasonable bond would be in the neighborhood of from $500,000 to $700,000.

Witness excused.

Chairman Bond: Any further testimony,—if not the Commission will close the case and take it under advisement.

[fol. 1864] BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title omitted]

REPORT OF THE COMMISSION FIXING SUPERSEDEAS BOND—Filed October 8, 1947

This cause came on for hearing before the Corporation Commission of Oklahoma on the 2nd day of October, 1947, at 10 o'clock, a.m., in the Commission's Court Room, Capitol Office Building, Oklahoma City, Oklahoma; the Honorable Reford Bond, Chairman; Ray O. Weems, Vice-Chairman, and Ray C. Jones, Commissioner, sitting. Mark Adams, Attorney of Wichita, Kansas, and Coleman Hayes, Attorney of Oklahoma City, appeared for the Palmer Oil Company; R. M. Williams, Attorney of Bartlesville, appeared for the Phillips Petroleum Company; Russell G. Lowe, Attorney of Tulsa, appeared for the Gulf Oil Corporation; W. H. Brown, Attorney of Oklahoma City, appeared for Anderson Prichard Oil Corporation; Floyd Green, Conservation Attorney and John Blanton, Assistant Conservation Attorney, appeared for the Commission.

The matter came on for hearing on the application of the respondents to fix supersedeas bond since notice has been given of intention to appeal to the Supreme Court. [fol. 1865] The Commission heard the testimony and argument and is of the opinion that the supersedeas bond should be fixed at $250,000, in order to properly protect all interested parties and the State of Oklahoma.

[fol. 1866] ORDER

It is therefore ordered by the Corporation Commission of Oklahoma that supersedeas bond in the amount of $250,000 be filed in this cause, said bond to be made payable

to the State of Oklahoma for use and benefit of all parties that might be aggrieved by the appeal lodged in this cause.

It is further ordered that the Corporation Commission retain jurisdiction of this cause for the purpose of refixing the supersedeas bond at some future date in the event the final decision in this cause is unusually delayed or there is a change of conditions relating to the operation of the West Cement Medrano common source of supply of oil and gas in Caddo County, Oklahoma.

Done and performed this the 3rd day of October, 1947.

Corporation Commission of Oklahoma, (Signed) Reford Bond, Chairman; Ray O. Weems, Vice Chairman; Ray C. Jones, Commissioner.

Attest: (Signed) Tom McMurray, Secretary. (Seal.)

[File endorsement omitted.]

[fol. 1867] [File endorsement omitted]

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

[Title omitted]

CHAIRMAN'S CERTIFICATE TO TRANSCRIPT OF RECORD

I, Reford Bond, Chairman of the Corporation Commission of the State of Oklahoma, do hereby certify that the above and foregoing is a true and correct transcript of the record made before the Corporation Commission in Cause CD-1308, above entitled,—That said Record consists of:

Volumes 1, 2, 3 and 4 of oral testimony, pleadings and certain instruments which are pleadings but also offered and received as exhibits,—

Volumes 1, 2 and 3 of Exhibits, as indicated by the index of Exhibits which immediately follows the General Index,—seven volumes in all.

I further certify that said record contains all of the pleadings filed in said cause, all of the evidence offered and

considered in the trial of said cause by the Corporation Commission, including all objections and Motions directed to the introduction of testimony, the rulings of the Commission thereon and all orders, with exceptions of counsel to such rulings and orders made by the Commission during the course of said hearing. Said record contains all of the facts, all of the testimony, oral and documentary, upon which the Findings of Fact, Conclusions of Law, and the Report and Order of the Commission, Order No. 20289, were based and is in all respects a true, correct and complete transcript of all of the record and proceedings had in said cause before the Corporation Commission of the State of Oklahoma.

Given under my hand and the Seal of the Corporation Commission of the State of Oklahoma, this 9th day of October, 1947.

Reford Bond, Chairman.

Attest: Tom McMurray, Secretary.

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Vol. IV

TRANSCRIPT OF RECORD

(Pages 1345 to 1539)

Supreme Court of the United States

OCTOBER TERM, 1951

No. 301

THE PALMER OIL CORPORATION, PAUL STERBA AND PAUL STERBA, JR., A MINOR, ETC., APPELLANTS,

vs.

AMERADA PETROLEUM CORPORATION, ET AL.

No. 302

KIT C. FARWELL, FRANK PHOHLEMANN, L. A. DAVIS, ET AL., APPELLANTS,

vs.

AMERADA PETROLEUM CORPORATION, ET AL.

APPEALS FROM THE SUPREME COURT OF THE STATE OF OKLAHOMA

FILED SEPTEMBER 4, 1951

PROBABLE JURISDICTION NOTED JANUARY 14, 1952

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APPEALS FROM THE SUPREME COURT OF THE STATE OF OKLAHOMA

VOL. IV

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JUDD & DETWEILER (INC.), PRINTERS, WASHINGTON, D.C., MARCH 3, 1952.

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BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

Cause C D No. 822

Order No. 16170

In the Matter of the Application of J. J. O'LOUGHLIN, Conservation Officer, for Establishment of Rules and Regulations for Governing Production, Conservation, Ratable Taking, and Transportation of Natural Gas from the East and West Cement and Chickasha Gas Fields

REPORT OF THE COMMISSION

This cause came on for hearing before the Corporation Commission of the State of Oklahoma in its court room in the Capitol Office Building, Oklahoma City, Oklahoma, on the 18th day of November, 1942, at 10 o'clock, A.M., upon an application filed by the Conservation Officer and pursuant to order of the Commission setting the same for hearing and notice published as required by law; at which time by proper order of the Commission the cause was continued for hearing on the 10th day of December, 1942, at 10 o'clock, A.M., when testimony was heard and the cause continued for further hearing on the 12th, 15th and 16th days of December, at which hearing the following appearances were made: for Ray Stephens Inc. Howard B. Hopps. Waldo E. Stephens, Wayne Stephens, J. F. Swain, Tom Ragsdale, and John M. Shoeppel; for Oklahoma Natural Gas Company, I. J. Underwood, C. H. Hale, and Gilbert Estill; for Magnolia Petroleum Company, W. R. Wallace; for Phillips Petroleum Company, E. G. De Parade; for Sinclair Prairie Oil Company, O. E. Dougherty and Walter Crandall; for the Ohio Oil Company, Frank Louis; for State Fuel and Supply Company, R. K. Osborn and Raymond A. [fol. 3] Tolbert; for Little Nick Oil Company, Jim Hatcher; for Darby Petroleum Corporation, D. C. Bothwell and John H. Nelimark; for Tom Palmer, John H. Nelimark, and Tom Palmer in person; Earl Foster, Conservation Attor-

ney, represented the Corporation Commission and evidence was deduced; whereupon the Commission closed the case and took the matter under advisement.

Now, on this 4th day of January, 1943, the Corporation Commission, being fully advised in the premises, finds as follows:

Findings

1. That notice by publication of the filing of the application herein, the time and place of the hearing thereon, and the purpose of said hearing, has been regularly given in all respects as required by law, and the Commission has jurisdiction of the subject matter embraced in said application and of the parties interested therein, and jurisdiction to issue and promulgate the hereinafter prescribed order.

2. That the provisions of this order are limited to the Medrano Sand of the West Cement Gas Field, located in Caddo County, Oklahoma, which is separate and distinct from all other sources of supply; that the first well was drilled in said common source of supply in 1936; that at the present time there are fifteen producing wells, which are owned by the following companies:

Darby Petroleum Corporation	2
Magnolia Petroleum Company	6
Palmer Oil Company	1

[fol. 4]

Phillips Petroleum Company	2
Ray Stephens, Inc.	4

3. That by the drilling of said wells the productive area of the Medrano Sand has been reasonably determined, and it now appears that the productive portion of the Medrano Sand underlies an area shown on the plat attached hereto, marked Exhibit "A", and made a part hereof; that the drilling of additional wells may show a change in the boundaries of said common source of supply; that said exhibit also shows the number and the location of all wells heretofore drilled into said sand.

4. That there are other wells drilled in the area which are producing from separate and distinct common sources

of supply, and some of the wells which are now producing from said Medrano Sand are also producing from other horizons; that the Medrano Sand should be separated from all other horizons and the production therefrom kept separate and distinct.

5. That the Medrano Sand is found at a depth varying from 4300 to 5200 feet beneath the surface; that the virgin shut-in well head pressure was approximately 1750 pounds per square inch, which has been materially decreased by the production of gas; that the producing horizon is from 20 to 200 feet in thickness, and the natural flow potentials of the wells vary from 10,000 cubic feet to 300,000,000 cubic feet per day; that the producing horizon consists of sand and sandy shale, which varies in porosity and permeability and thickness throughout the common source of supply.

[fol. 5] 6. That pressure differentials or gradients exist which indicate that there is a migration of gas from certain wells and leases to other wells and leases; that certain portions of the field have been more uniformly developed than other portions, as is shown by Exhibit "A" hereto attached.

7. That the full production of gas from the West Cement Field and from the Medrano Sand thereof is in excess of the market demand therefrom.

8. That in the years 1913 and 1915 the Legislature of the State of Oklahoma enacted laws governing the production and ratable taking of natural gas, prohibiting waste thereof, and providing that the Corporation Commission may take into consideration the acreage drained by each well in prorating gas production, and authorizing and directing the Corporation Commission to promulgate rules and regulations for determination of the natural flow of wells and taking of natural gas from the common sources of supply of gas within the State so as to prevent waste, protect the interests of the public and of all those having a right to produce therefrom, and to give to each owner or lessee an opportunity to produce all the natural gas that is located in its original state under the property owned by him; that in the years 1933 and 1935 the Legislature enacted additional statutes, which pertained principally to the production of oil, but in general providing that production of

oil or gas in such manner and under such conditions as to constitute waste is prohibited, and the Corporation Com- [fol. 6] mission was given authority and charged with the duty to make rules and regulations and orders for the prevention of such waste.

9. That pursuant to said statutes the Corporation Commission in the year 1916 adopted general rules and regulations providing for the taking of potentials and ratable taking of gas which were and are applicable to all gas fields in this state; that same have been amended in only a few particulars since that time.

10. That in order to carry out the laws of the State of Oklahoma and to perform the duties and obligations placed upon the Corporation Commission thereby, it is necessary to amend the said general rules and regulations and to provide and promulgate additional regulations for production of gas from the Medrano Sand of the West Cement Pool in order to prevent waste, insure ratable taking, protect the interests of the public and all parties interested therein, and to give to all royalty owners, lessees, and others interested therein an opportunity to recover approximately the amount of gas originally underlying the surface of the land owned by him.

11. That in order to accomplish as nearly as possible the objects set out in the preceding paragraph, formulas should be adopted by the Commission for the allocation of gas produced, which should take into consideration productive acreage, natural flow, and the pressure factor; and the Commission should promulgate rules and regulations to determine the natural flow of gas wells and to determine [fol. 7] the pressure factor, all of which is hereinafter set out in detail in this order.

12. That a well in the Medrano Sand will drain at least 160 acres, and this acreage unit should be considered in determining the proportion that each well should be allowed to produce in order to insure ratable taking and to prevent waste.

13. That in order to insure ratable taking in said Medrano Sand, the Commission should determine the total amount of gas to be produced from all of the producing horizons in

the West Cement Field, and should allocate to the Medrano Sand eighty-five per cent (85%) thereof.

14. That the use of the formulas hereinafter set out will provide for ratable taking and prevent waste of natural gas in said pool, and will protect the interests of the public and all parties interested in said common source of supply.

15. That in taking pressures and determining the natural flow of the wells, each operator in said Medrano Sand should have a representative present and participating, and each operator should be requested to designate such representative, to be approved by the Conservation Officer, and to serve on a committee known as the "Operators Committee"; that the Bureau of Mines is making an investigation of conditions in said field, and should be invited and requested to have a representative on said committee; that the Oil and Gas Conservation Department should give full consideration to every suggestion made by said committee for determination of potentials and pressures, but final [fol. 8] determination should be made by the Conservation Department.

16. That all of the operators in the Medrano Sand have agreed in open court that all of the findings herein are true and correct.

Order

It is therefore ordered by the Corporation Commission of the State of Oklahoma as follows, to-wit:

1. That this order shall be effective only as to the Medrano Sand of the West Cement Gas Field, located in Caddo County, State of Oklahoma; that the productive area of said Medrano common source of supply, as used in this order, shall be all of the acreage located within the limits of said source of supply as found and determined by this Commission, and as reflected by Exhibit "A" attached hereto, and hereby made a part of this order.

2. That gas produced from the Medrano Sand must be segregated from any and all other sources of supply so that there shall be no commingling of gas or gases from any other source or sources of supply with gas from the Medrano Sand in any well bore.

3. That each well producing gas from the Medrano Sand

shall have allocated to it each month as its ratable portion of the total take of gas from the Medrano separate common source of supply that proportion of the entire monthly allocation to said common source if supply as shall be reflected under the monthly calculation of the allocation formula; that the "allocation formula" shall be "productive acreage" times "natural flow potential" times "pressure factor" for each individual well.

[fol. 9] 4. That each operator in said common source of supply shall divide his acreage into units; and a "unit" as used in this order shall be any square or rectangle of surface acreage of not to exceed one hundred and sixty (160) acres and upon which there exists one well only producing from the Medrano Sand; that if more than one well is located on any tract of 160 acres, or less, the units in said tract shall be of equal surface acreage.

5. That "productive acreage" to be used as a factor in the allocation formula provided in this order shall be such portion of the total acreage of the unit as is within the productive area of the Medrano common source of supply.

6. *Potential Factor*—That "natural flow potential" shall be that volume of gas capable of being produced in a twenty-four hour period measured at standard conditions of sixty degrees (60°) Fahrenheit temperature, and at four (4) ounce pressure above atmospheric pressure assumed to be 14.4 pounds per square inch pressure, or at 14.65 pounds per square inch pressure absolute, and with atmospheric pressure at the sand face as provided by the Bureau of Mines Monagraph Seven (7) back pressure method, corrected to such volume as a seven inch (7") outside diameter twenty-four pound (24#) casing will deliver at the well head against atmospheric pressure.

That natural flow potential tests taken as hereinabove provided shall be immediately made by or under the supervision of and in the presence of an authorized representa-[fol. 10] tive of the Oil and Gas Conservation Department, and the official results of said tests shall be determined by said department; that immediately after completion of the tests of all wells in the Medrano Pool, such tests shall be filed of record in the offices of the Conservation Department; that subsequent natural flow potential tests shall be

taken by or under the supervision of and in the presence of an authorized representative of said Department at such times as may be provided by law and directed by order of the Corporation Commission, or as may be agreed upon by all of the operators of wells in Medrano Pool, with the approval of the Conservation Officer, or his representative; provided that, a new potential may be taken on any well or wells at the request of the owner or operator, in which event the open flow test so taken shall be effective regardless of whether it is more or less than the then effective tests; that before taking such test, notice must be given to all other operators and purchasers for a sufficient time to give them opportunity to be present; that all such subsequent natural flow potentials shall be effective as of the first day of the month succeeding the date on which the potential is taken.

7. *Pressure Factor*—That "pressure factor" shall be the value obtained by taking the maximum shut-in casinghead pressure of each well minus ninety-five one-hundreds (0.95) times the areal weighted average shut-in casinghead pressure of the pool divided by the areal weighted average shut-in casinghead pressure of the pool minus ninety-five-one-hundredths (0.95) times the areal weighted [fol. 11] average shut-in casinghead pressure of the pool, or as expressed by the fraction: $\frac{P - 0.95F}{F - 0.95F}$

"P" of said fraction being the maximum shut-in casinghead pressure in pounds per square inch gauge obtained within a twenty-four (24) hour shut-in period, and "F" of said fraction being the areal weighted shut-in casinghead pressure in pounds per square inch gauge of all Medrano Sand gas wells in the pool; that the areal weighted average shut-in casinghead pressure shall be determined by the summation of the quantities obtained by multiplying the maximum shut-in casinghead pressure of each Medrano gas well by the number of productive acres in each well's acreage unit, all divided by the summation of the number of productive acres in each well's acreage unit.

That shut-in casinghead pressures for use in "pressure

factor'' may be measured by a deadweight test gauge at the casinghead, or may be calculated at each operator's option by obtaining the pressure at the sand base or bottom casing perforation in the Medrano Sand with a bottom hole pressure bomb and by deducting therefrom the weight of a column of dry gas extending from the casinghead to the point of such bottom hole pressure measurement.

That the shut-in casinghead pressures to be used in the ''pressure factor'' for gas allocation purposes shall be determined each calendar month between the 20th and 30th day of the month; that same shall be filed in the office of the Conservation Department on or before the [Fol. 12] first day of the succeeding month; that the monthly shut-in casinghead gas pressure shall be taken by or under the supervision of and in the presence of an authorized representative of the Oil and Gas Conservation Department, and such pressures so obtained shall be substituted in the ''pressure factor'' of the gas allocation formula of each well to allocate the gas production for the succeeding month.

8. That in order to carry out the provisions of this order it is necessary that all operators, lessees, contractors, drillers, gun perforators, and others who perform any service or keep any reports, should furnish to the Oil and Gas Conservation Department, or to any of its representatives, a complete report of their records in regard to the physical status and log of the well, and especially depths and thicknesses of the sand, perforation points, casing records, cementing records, and like information; that upon request of the Conservation Officer such reports shall be filed in the office of the Oil and Gas Conservation Department.

9. That all gas wells producing from the Medrano Sand shall be equipped with tubing in such manner that the wells can be properly conditioned for the taking of natural flow potential tests of the Medrano Sand; provided that all tubing shall be at least two inches (2″) in diameter and free from any obstruction that would prevent the use of a bottom hole gauge; that said wells shall be equipped for the taking of bottom hole pressure gauges at the face of said sand.

10. That after the first natural flow potentials and shut-in

[fol. 13] casinghead pressures on all Medrano Sand wells have been completed under this order for gas allocation purposes; the allowable gas production shall be calculated as herein provided, and shall be effective as of December 31, 1942, until the first day of the month succeeding the date of completion of said natural flow and shut-in casinghead pressure tests by the Oil and Gas Conservation Department; that all wells underproduced or overproduced during the aforesaid period, as determined by the calculated gas allowables, shall be adjusted in succeeding months, as may be hereafter determined by the Conservation Department, but shall not extend beyond June 30, 1943, so that such underproduction or overproduction will be eliminated in such manner as will minimize variation of current shut-in casinghead pressures by reason of such adjustment.

11. That when the first natural flow potential tests and the first shut-in casinghead pressure tests on the Medrano Sand wells are completed under and pursuant to this order, and commencing with the time that gas allocations are calculated in advance monthly for each well, all overproduction or underproduction of gas occurring in any month, as determined by calculation from the allowable gas production of each well, as provided for by this order, shall be adjusted in the allowable for said well for the ensuing month, and the production from such well shall be regulated to conform with same during said ensuing month, unless otherwise ordered by the Commission.

[fol. 14] 12. That any well hereafter completed in the Medrano Sand shall, upon completion in said separate source of supply, be subject to all of the provisions of this order, except as hereinafter provided; that the gas allowable for any such well shall become effective on the day that the connections with the pipe line are made and it begins producing gas; and after the natural flow potential test and casinghead pressure for gas allocation purposes has been determined, if it appears at the first hearing before the Commission thereafter that said well during such period has produced more or less than its just proportion, then the same shall be adjusted in the same manner as is provided above for adjustment in the case of underproduction or overproduction.

13. That gas allocation volumes shall be based upon a correction of sixty degrees (60°) Fahrenheit temperature and two (2) pounds per square inch gauge above an assumed atmospheric pressure of fourteen and four-tenths (14.4) pounds per square inch absolute or to sixteen and four-tenths (16.4) per square inch absolute pressure.

14. That each operator in said pool shall select a representative, to be approved by the Conservation Officer, to serve on an Operators Committee; and the Conservation Officer shall request the Bureau of Mines to select a representative to serve on said Committee.

15. That the Operators Committee shall be given an opportunity to be present and observe the taking of all natural flow gauges and casinghead pressure tests, and to make [fol. 15] recommendations and suggestions and render all possible assistance to the Conservation Department; that the Conservation Officer, or his representative, shall make every possible effort to secure the unanimous approval of the Operators Committee, including the representative of the Bureau of Mines, as to all natural flow gauges and casinghead pressure tests taken by him; but in case of failure to agree, the determination of the Conservation Officer shall be final and effective.

16. That nothing in this order shall affect the rights of any operator to present any claim to this Commission or to any court for failure to comply with the provisions of the law concerning the price to be paid for gas in said pool.

17. That nothing in this order shall affect or prejudice the rights of any operator, producer, or taker of gas to claim an adjustment before this Commission or before any court because of the failure of any other person to take gas ratably prior to January 1, 1943.

18. That this order and the rules and regulations herein promulgated shall be effective as of the 1st day of January, 1943, until further order of this Commission.

19. That the Commission shall hold regular monthly hearings after due and proper notice, to all producers and purchasers, at which time each purchaser of gas in the West Cement Field shall notify the Conservation Department of the volume of gas such purchaser anticipates taking from said West Cement Field during the ensuing

[fol. 16] month, and the Commission shall thereupon determine the ratable proportion of the gas to be produced from the Medrano Pool to be allocated to each well, making adjustments as to overage and underage as hereinabove set out; provided that, if during the month the amount of gas which a purchaser desires to take from said West Cement Field decreases or increases from the amount originally stated to the Commission, said purchaser shall immediately notify the Conservation Department, and that Department is hereby directed to prepare and issue a new allocation for all wells in the pool so that each well will receive its ratable and proportionate part during that month.

20. That the hearing on all other common sources of supply of gas in the East and West Cement and Chickasha Fields is hereby continued to the 20th day of January, 1943, at 10 o'clock, A.M.

Done and Performed by the Corporation Commission at its offices in the Capitol Office Building, Oklahoma City, Oklahoma, this 4th day of January, 1943.

Corporation Commission of the State of Oklahoma, Reford Bond, Chairman; Ray O. Weems, Vice Chairman, —— —— Commissioner.

Attest: M. H. Shepard, Secretary. (Seal).

[fol. 17] EXHIBIT 13

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

Cause C D No. 837

Order No. 16342

In the Matter of the Application of WALKER T. POUND, Conservation Officer, for Establishment of Rules and Regulations Governing Production, Ratable Taking, Conservation, and Transportation of Natural Gas from the MEDRANO SAND of the WEST CEMENT GAS FIELD.

REPORT OF THE COMMISSION

This cause came on for hearing before the Corporation Commission of the State of Oklahoma in its court room in

the Capitol Office Building, Oklahoma City, Oklahoma, on the 26th day of February, 1943, at 11 o'clock, A. M., upon an application filed by the Conservation Officer and pursuant to order of the Commission setting the same for hearing and notice published as required by law; at which time by proper order of the Commission the cause was continued and same came on for hearing on the 27th day of March, 1943, at 9 o'clock, A. M., when the following appearances were made: Phillips Petroleum Company by E. G. DeParade; Magnolia Petroleum Company by W. R. Wallace; Oklahoma Natural Gas Company by Clyde H. Hale; the Ohio Oil Company by Frank Louy, Jr.; Gulf Oil Corporation by D. D. Adams; Ray Stephens, Inc. by Howard B. Hopps; and Earl Foster, Conservation Attorney, represented the Commission, and evidence was adduced; whereupon the Commission closed the case and took the matter under advisement.

Now, on this 13th day of April, 1943, the Corporation [fol. 18] Commission, being fully advised in the premises, finds as follows:

Findings

1. That notice by publication of the filing of the application herein, the time and place of the hearing thereon, and the purpose of said hearing, has been regularly given in all respects as required by law, and the Commission has jurisdiction of the subject matter embraced in said application and of the parties interested therein, and jurisdiction to issue and promulgate the hereinafter prescribed order.

2. That on the 4th day of January, 1943, the Commission promulgated its Order No. 16170 in Cause C. D. No. 822, which provided rules and regulations for the taking of potentials, pressure gauges, and fixing allowables for all wells producing from the Medrano Sand of the West Cement Gas Field; that since the issuance of said order potential tests have been made on all but two wells in said pool, and pressure gauges have been taken on all but one well; that from the information obtained from the taking of said tests and from other testimony it appears from the record in this cause that certain rules and regulations set

out in said Order No. 16170 should be modified and changed, as hereinafter specifically set out in this order.

3. That schedules should be issued allocating the gas to be produced from said field to the various wells for the last half of April, 1943, pursuant to said Order No. 16170, as amended by this order, and overages and underages [fol. 19] should be calculated from and after April 16, 1943.

4. That in determining the allowables to be given to each Medrano Sand well, the total anticipated production for the month of April, 1943 of 2,730,200 MCF, as shown by the record in this cause, should be divided by 30 to obtain the daily anticipated production of 91,007 MCF, and the formula set out in said order should be applied thereto, subject to changes as changes in production occur.

5. That the changes in Order No. 16170 as hereinafter made, and the allowables and schedules as hereinafter ordered would be fair and equitable to all operators, producers, and royalty owners and others interested in said common source of supply, and would tend to prevent waste, increase the ultimate recovery of gas, and equitably divide the production from said common source of supply, as required by the laws of the State of Oklahoma and rules and regulations of the Corporation Commission.

Order

It is therefore ordered by the Corporation Commission of Oklahoma as follows:

1. That Paragraph 7 of the Order No. 16170, issued in Cause C. D. No. 822, be, and the same is hereby, amended to read as follows:

> "7. *Pressure Factor*—That "Pressure factor" shall be the value obtained by taking the maximum shut-in casinghead pressure of each well minus eighty one-hundredths (0.80) times the areal weighted average shut-in casinghead pressure of the pool divided by the [fol. 20] areal weighted average shut-in casinghead pressure of the pool minus eighty one-hundredths (0.80) times the areal weighted average shut-in casing-

head pressure of the pool, or as expressed by the fraction:

$$\frac{P - 0.80F}{F - 0.80F}$$

"P" of said fraction being the maximum shut-in casinghead pressure in pounds per square inch gauge obtained within a twenty-four (24) hour shut-in period, and "F" of said fraction being the areal weighted shut-in casinghead pressure in pounds per square inch gauge of all Medrano Sand gas wells in the pool; that the areal weighted average shut-in casinghead pressure shall be determined by the summation of the quantities obtained by multiplying the maximum shut-in casinghead pressure of each Medrano gas well by the number of productive acres in each well's acreage unit, all divided by the summation of the number of productive acres in each well's acreage unit.

"That shut-in casinghead pressures for use in "pressure factor" may be measured by a deadweight test gauge at the casinghead, or may be calculated at each operator's option by obtaining the pressure at the sand base or bottom casing perforation in the Medrano Sand with a bottom hole pressure bomb and by deducting therefrom the weight of a column of dry gas extending from the casinghead to the point of such bottom hole pressure measurement.

[fol. 21] "That the shut-in casinghead pressures to be used in the "pressure factor" for gas allocation purposes shall be determined each calendar month between the 20th and 30th day of the month; that same shall be filed in the office of the Conservation Department on or before the first day of the succeeding month; that the monthly shut-in casinghead gas pressure shall be taken by or under the supervision of and in the presence of an authorized representative of the Oil and Gas Conservation Department, and such pressures so obtained shall be substituted in the "pressure factor" of the gas allocation formula of each well to allocate the gas production for the succeeding month."

2. That Paragraph 10 of said Order No. 16170 be, and same is hereby, amended to read as follows:

"10. That after the first natural flow potentials and shut-in casinghead pressures on all Medrano Sand wells have been completed under this order for gas allocation purposes, the allowable gas production shall be calculated as herein provided, and shall be effective as of April 16, 1943, at 7 o'clock, A. M.; and all over-production and underproduction shall be determined from and after April 16, 1943."

3. That Paragraph 11 of said Order No. 16170, be, and same is hereby, amended to read as follows:

"11. That from and after April 16, 1943, at 7 o'clock, A. M., all overproduction and underproduction of gas [fol. 22] occurring in any month on wells producing in said Medrano Sand, as determined by calculations from the allowable gas production of each well, as provided by this order, shall be adjusted in the allowable for said well for the ensuing month after the report of said well is received by the Conservation Department, and the production from said well shall be regulated to conform with same during said ensuing month, unless otherwise ordered by the Commission."

4. That Paragraph 12 of said Order No. 16170, be, and same is hereby, amended to read as follows:

"12. That any well hereafter completed in the Medrano Sand shall, upon completion in said separate source of supply, be subject to all of the provisions of this order, except as hereinafter provided; that the gas allowable for any such well shall become effective on the day that the connections with the pipe line are made and it begins producing gas; and after the natural flow potential test and casinghead pressure for gas allocation purposes has been determined, if it appears at the first hearing before the Commission thereafter that said well during such period has produced more or less than its just proportion, then the same shall be adjusted in the same manner as provided above for adjustment in the case of underproduction

or overproduction; provided that, in making the allocation for any such well not more than a fifteen-day allocation shall be allowed for the period from the [fol. 23] date when connection with the pipe line is made and it begins producing gas to the date the potential is made."

5. That any well in the Medrano Sand that has not been reconditioned by setting tubing and separating the Medrano Sand from other producing horizons, as provided in said Order No. 16170, on the 16th day of April, 1943, shall be shut in and granted no allowable until it has been properly reconditioned and connected with the pipe line and begins to produce gas; provided that, if a well has not taken a potential test within fifteen days after it has been reconditioned, then no further allowable will be given until the potential gauge is taken.

6. That schedules shall be prepared showing the allowable for each Medrano Sand well for the period from April 16, 1943, at 7 o'clock, A. M., to May 1, 1943, at 7 o'clock, A. M., based upon the formulas set out in said Order No. 16170, as amended hereby, and upon an anticipated production of 91,007 MCF per day, as shown by the testimony in this case, and subject to the changes in schedule as provided in said order.

7. That a copy of said schedules and allowables shall be furnished to each operator, producer and purchaser of gas in said Medrano Sand source of supply.

Done and performed by the Corporation Commission at its offices in the Capitol Office Building, Oklahoma City, Oklahoma, this 13th day of April, 1943.

[fol. 24] Corporation Commission of the State of Oklahoma; Reford Bond, Chairman; Roy O. Weems, Vice Chairman; ——, Commissioner.

Attest: Carl B. Mitchell, Secretary. (Seal.)

[fol. 25] EXHIBIT 14

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

Cause CD No. 843

Order No. 16388

In the Matter of the Application of WALTER T. POUND, Conservation Officer, for establishment of Rules and Regulations Governing the SOUTHWEST CEMENT OIL FIELD.

REPORT OF THE COMMISSION

This cause came on for hearing before the Corporation Commission of the State of Oklahoma in its court room in the Capitol Office Building, Oklahoma City, Oklahoma, on the 28th day of April, 1943, at 11 o'clock, A. M., upon an application filed by the Conservation Officer and pursuant to an order of the Commission setting the same for hearing and notice published according to law; at which time the Conservation Officer and Conservation Attorney were present and the following appearances were made: Ray Stephens by Howard B. Hopps; Phillips Petroleum Company by E. G. DeParade; Magnolia Petroleum Company by W. R. Wallace; and Anderson-Prichard Oil Corporation by Ralph Fillmore; whereupon evidence was presented, and the Commission, being fully advised in the premises, granted the following order, finding as follows:

Findings

1. That notice by publication of the filing of the application herein, the time and place of the hearing thereon, and the purpose of said hearing, has been regularly given in all respects as required by law, and the Commission has [fol. 26] jurisdiction of the subject matter embraced in said application and of the parties interested therein, and jurisdiction to issue and promulgate the hereinafter prescribed order.

2. That on or about the 9th day of March, 1943, Ray Stephens completed an oil well in the Southeast Quarter of the Southwest Quarter of the Southeast Quarter of Sec-

tion 35, Township 6 North, Range 10 West, Caddo County, Oklahoma, at a total depth of 5,753 feet, with an initial production of 589 barrels of oil in eight hours from the Medrano Sand; that said Pierson #1 well is located on the south flank of the West Cement Gas Field and it has not been definitely established that the oil produced from said well and the gas produced from the Medrano Sand of the West Cement Gas Field are from the same common source of supply, although many facts and circumstances indicate that the oil and gas are produced from the same reservoir.

3. That other wells are now being drilled into said oil producing horizon and no doubt additional wells will be drilled; that in order to conserve the reservoir energy and protect the producing horizon a drilling and casing program should be adopted at this time, and the Commission should retain jurisdiction of the cause for the purpose of hearing additional testimony on the application and making such orders, rules and regulations as the Commission may then deem advisable.

4. That the Ray Stephens Pierson #1 well was completed by setting approximately 300 feet of surface casing, [fol. 27] with 7" casing set at the bottom of the well and perforated, and by equipping the well with 2½" tubing; that all wells in said pool should be completed and equipped in approximately the same manner, with the additional requirements and exceptions hereinafter set out in this order, and all production and potentials should be through tubing.

Order

It is therefore ordered by the Corporation Commission of the State of Oklahoma as follows:

1. All oil wells drilled into the Medrano Sand of the Southwest Cement Oil Field shall be equipped with not less than 300 feet of surface casing, cemented from top to bottom. The size of the flow string of casing shall be at the discretion of the operator, but same shall be set at the bottom of the hole and cemented with not less than 1,000 sacks of cement, and perforated. If any operator runs a string of casing other than 7", it is understood that he shall not receive any advantage, nor will any disadvantages

be considered, in taking potentials and making other rules and regulations governing this field. If an operator sets a flow string of casing above the base of the Medrano Sand and later deepens the well, then a liner shall be set in the additional hole, and same shall be cemented and perforated as required for the original flow string.

2. All production and potentials shall be through 2½" tubing, the bottom of which shall be set not higher than [fol. 28] the top of the producing horizon.

3. Jurisdiction over this cause is hereby retained and the cause is hereby continued until the 13th day of May, 1943, at 10 o'clock, A. M., for the purpose of hearing testimony and making such orders, rules and regulations for said oil pool as the Commission may deem advisable.

Done and performed by the Corporation Commission at its offices in the Capitol Office Building, Oklahoma City, Oklahoma, this 28th day of April, 1943.

Corporation Commission of the State of Oklahoma; Reford Bond, Chairman; Ray O. Weems, Vice-Chairman; Wm. J. Armstrong, Commissioner.

Attest: Carl B. Mitchell, Secretary. (Seal.)

[fol. 29] EXHIBIT 15

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

Cause C D No. 842

Order No. 16378

In the Matter of the Application of WALKER T. POUND, Conservation Officer, for Orders, Rules and Regulations Governing the Production of Oil and Gas in the WEST CEMENT FIELD

Report of the Commission

This cause came on for hearing before the Corporation Commission of the State of Oklahoma in its court room in the Capitol Office Building, Oklahoma City, Oklahoma, on

the 28th day of April, 1943, at 11 o'clock, A.M., upon an application filed by the Conservation Officer and pursuant to an order of the Commission setting the same for hearing and notice published as required by law; at which hearing the Conservation Officer and Conservation Attorney were present and the following appearances were made: Oklahoma Natural Gas Company by Gilbert Estill, E. McAninch, and O. P. Elkins; Ray Stephens Inc. by Howard B. Hopps, Waldo E. Stephens and C. W. Stephens; Magnolia Petroleum Company by R. D. Hanley, J. F. Lewis, W. H. Speaker, and W. R. Wallace; Cities Service Gas Company by Del Howard and Lane Ferguson; Phillips Petroleum Company by E. G. DeParade, C. W. Buckley, and H. H. Kaveler; Darby Petroleum Corporation by D. C. Bothwell; Gulf Oil Corporation by D. D. Adams; The Pure Oil Company by Alvin Richards; and Petroleum Administration for War by C. C. Brown and Seth W. Herndon; whereupon evidence was presented, and the Commission took the matter under advisement.

Now, on this 5th day of May, 1943, the Commission, being fully advised in the premises, finds as follows:

Findings

1. That notice by publication of the filing of the application herein, the time and place of the hearing thereon, and the purpose of said hearing, has been regularly given in all respects as required by law, and the Commission has jurisdiction of the subject matter embraced in said application and of the parties interested therein, and jurisdiction to issue and promulgate the hereinafter prescribed order.

2. That on the 4th day of January, 1943, this Commission issued its Order No. 16170 in Cause C D No. 822, which in substance provided a method for determination of potentials and pressures for the West Cement Gas Field Medrano Sand gas wells, and provided a formula for allocation purposes, which formula takes into consideration productive acreage and potential, in order that there may be ratable taking, prevention of waste, and protection for the public and all interested parties.

3. That said order provides that monthly hearings shall

be held by the Commission for the purpose of receiving nominations of purchasers as to the volume of gas they anticipate taking from the Medrano Sand of the West Cement Field during the ensuing month.

4. That the anticipated demand from the Medrano Sand during the month of May 1943 is 102,700 MCF daily, which amount should be divided among the wells producing from the Medrano Sand according to the formula set out in Order No. 16170, as amended by Order No. 16342.

5. That such allocation would be fair and equitable to operators, purchasers, and royalty owners, would protect the interests of the public and all persons interested therein, [fol. 30] prevent waste, conserve the reservoir energy, and permit each operator to obtain currently his proportionate part of the gas and ultimately obtain the approximate amount of gas originally underlying his land.

6. That the Commission does not have sufficient evidence at this time to grant other requests set out in the application, and this cause should be continued for further hearing so that additional testimony may be introduced and additional recommendations made.

Order

It is therefore ordered by the Corporation Commission of the State of Oklahoma as follows:

1. The anticipated demand for gas from the Medrano Sand wells in the West Cement Gas Field during the month of May, 1943, of 102,700 MCF per day, shall be divided among the said wells according to the formula adopted by the Commission in Order No. 16170, as amended by Order No. 16342, and schedules shall be issued setting out the allowables as soon as possible, giving to each operator the allocation for each well.

2. Jurisdiction is hereby retained over this cause for the purpose of hearing additional testimony for the making of other orders, rules and regulations governing the Medrano Sand, and this cause is continued for hearing on the 13th day of May, 1943, at 10 o'clock, A. M., at which time all persons, firms and corporations should introduce evidence supporting any rules and regulations prayed for in said application.

Done and performed by the Corporation Commission this 5th day of May, 1943.

Corporation Commission of the State of Oklahoma, Reford Bond, Chairman; Ray O. Weems, Vice-Chairman; —— — ——, Commissioner.

Attest: Carl B. Mitchell, Secretary. (Seal.)

[fol. 31] EXHIBIT 16

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

Cause C D No. 842

Order No. 16399

In the Matter of the Application of WALKER T. POUND, Conservation Officer, for Orders, Rules and Regulations Governing the Production of Oil and Gas in the WEST CEMENT FIELD

Report of the Commission

This cause came on for hearing before the Corporation Commission of the State of Oklahoma in its court room in the Capitol Office Building, Oklahoma City, Oklahoma, on the 13th day of May, 1943, at 10 o'clock, A. M., upon the Amended Application filed by the Conservation Officer and pursuant to an order of the Commission setting the same for hearing and notice published as required by law; at which hearing the Conservation officer and Conservation Attorney were present and the following appearances were made: Oklahoma Natural Gas Company by Gilbert Estill, E. C. McAninch, and Arnold F. Parr; Cities Service Gas Company by Del Howard and O. R. Stites; Phillips Petroleum Company by D. R. McKeithan, H. H. Kaveler, E. G. DeParade, and C. W. Binckley; Ray Stephens, Incorporated, by Ray Stephens and Howard B. Hopps; Magnolia Petroleum Company by W. R. Wallace, J. F. Lewis, and R. D. Hanley; Darby Petroleum Corporation by John H. Nelimark; Palmer Oil Company by John H. Nelimark; and

Petroleum Administration for War by David M. Logan, Joe Cannon, and Seth W. Herndon; whereupon evidence was presented, and the Commission, being fully advised in the premises, finds as follows:

Findings

1. That notice by publication of the filing of the application herein, the time and place of the hearing thereon, and the purpose of said hearing, has been regularly given in all respects as required by law, and the Commission has jurisdiction of the subject matter embraced in said application and of the parties interested therein, and jurisdiction to issue and promulgate the hereinafter prescribed order.

2. That in the Medrano Sand of the West Cement Field in Caddo County, Oklahoma, several wells have been drilled, which wells have varied potentials and bottom hole and casinghead pressures; that the Conservation Department and the Bureau of Mines and the various companies interested in said common source of supply have for several months prior hereto made a diligent study of said field, and pursuant thereto the Commission did on the 4th day of January, 1943, issue its Order No. 16170, which prescribed rules and regulations for the production and ratable taking of gas from said Medrano Sand; that recently Ray Stephens drilled an oil well in the south flank of the West Cement Field which is producing oil from the Medrano Sand with a capacity of approximately 1,000 barrels per day; that numerous tests have been made for the purpose of ascertaining whether or not said oil well is producing from the same horizon as the gas from the Medrano Sand, and it appears from the testimony that the oil well is producing from the common source of supply that at least some of the gas wells are producing from; that owing to the difference in pressures in the gas wells it has not been definitely determined whether the Medrano Sand, as now defined by the orders of this Commission and as generally understood by the experts, is all producing from the same horizon or whether there are different and separate common sources of supply in said field.

3. That in order to promulgate proper rules and regulations for the conservation of the natural gas in said field, to

prevent waste thereof, and to protect the correlative rights of the parties interested, it is necessary to have additional [fol. 32] information, and in order to protect the oil producing horizon which appears to be located on the south flank of said field, additional information is necessary so that proper rules and regulations may be issued to conserve the reservoir energy in the oil field, protect the rights of those interested, and prevent the waste of oil in said field.

4. That from the testimony introduced at this hearing it appears to the Commission that the best method to obtain the necessary information for promulgation of proper orders, rules and regulations, would be to shut in the gas wells producing from the Medrano Sand for a period of two weeks, in order to permit the Conservation Officer and his deputies, the United States Bureau of Mines and the operators in said field to make a study of the conditions existing therein; that the shutting in of said wells is necessary for protection of the reservoir energy of both oil and gas, prevention of waste, and protection of correlative rights.

5. That both oil and gas are vital to the war effort, and it appears that the Petroleum Administrator for War and his assistants have duly considered this matter and are of the unanimous opinion that the best possible method for obtaining necessary information so that the oil field and the gas field producing from the Medrano Sand may be produced in a manner that will best promote the war effort, is the shutting down of the gas wells as herein ordered.

Order

It is therefore ordered by the Corporation Commission of the State of Oklahoma as follows:

1. That beginning at 7 o'clock, A. M., on the 18th day of May, 1943, all wells producing gas from the Medrano Sand of the West Cement Field in Caddo County, Oklahoma, be shut in, and that no gas be produced therefrom for a period of two weeks, or until 7 o'clock, A. M., on the 1st day of June, 1943.

2. The Conservation Department is hereby directed to make a diligent, complete, and exhaustive study of the conditions in said field, including bottom hole pressures, and obtain all possible data that may be gained by the shutting in of said wells; and the Bureau of Mines and the Petroleum

Administration for War and all the operators interested in said field are hereby requested to make a diligent, complete, and exhaustive study of the conditions in said gas field and make that information available to this Commission so that proper rules, regulations and orders may be issued governing the production of oil and gas from the Medrano Sand of the West Cement Field.

3. Jurisdiction is hereby retained of this cause for the purpose of issuing any orders, rules and regulations that the Commission may deem necessary and proper from the evidence obtained.

Done and performed by the Corporation Commission at its offices in the Capitol Office Building, Oklahoma City, Oklahoma, this 13th day of May, 1943.

Corporation Commission of the State of Oklahoma, Reford Bond, Chairman; Ray O. Weems, Vice-Chairman; ——— ———, Commissioner.

Attest: Carl B. Mitchell, Secretary. (Seal.)

[fol. 33] EXHIBIT 17

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

Cause C D No. 849

Order No. 16422

In the Matter of the Application of WALKER T. POUND, Conservation Officer, for Orders, Rules and Regulations Governing the Production of Oil and Gas in the WEST CEMENT FIELD

Report of the Commission

Now, on the 1st day of June, 1943, the above entitled matter comes on to be heard upon the application of the Conservation Officer for the issuance of a temporary order as prayed for in the application filed in this cause, and the Conservation Officer and Conservation Attorney appearing, the Commission, having heard the evidence and being otherwise advised in the premises, finds as follows:

Findings

1. That several orders have been heretofore issued by this Commission for the purpose of preventing waste, protecting correlative rights, and providing for ratable taking of both oil and gas from the Medrano Sand of the West Cement Field; and that on the 13th day of May, 1943, the Commission issued Order No. 16399 in Cause C D No. 842, which required that all wells producing gas from the Medrano Sand be shut down for a period of fifteen days, beginning as of the 18th day of May, 1943, at 7 o'clock, A. M., and until June 1, 1943.

2. That during said shut down period the Conservation Department and the Bureau of Mines and the operators in said pool have made numerous tests and study of the conditions in said Medrano Sand for the purpose of recommending rules and regulations for the prevention of waste of oil and gas in said field, and conferences have been held between the Bureau of Mines and the Conservation Officer and the various operators, and the conditions existing have been thoroughly considered, and it appears that if all of the gas wells in said field were permitted to produce without restriction and to produce all the gas for which there is a firm market demand it would cause the waste of both oil and gas in said field, injure the reservoir energy, and cause uncompensatable drainage between the wells and leases in said field.

3. That in order to prevent such waste and drainage, protect correlative rights, and insure ratable taking, it is necessary that the production of gas from the Medrano Pool be restricted and that the wells be allowed to produce only fifty per cent of their allowable production as shown by the records of the Corporation Commission for the last fifteen days of the month of April 1943, and that three wells be entirely shut down until further order of the Commission, to-wit: the Ray Stephens Wilhite #3 in order to determine whether it is producing from a different common source of supply, and the Magnolia Henley #2 and Medrano #6 wells, which are located so near to the oil wells producing in said pool that they may be producing from the same source of supply as the oil wells.

[fol. 34] Order

It is therefore ordered by the Corporation Commission of the State of Oklahoma as follows:

1. That the Ray Stephens Wilhite #3, the Magnolia Henley #2 and Medrano #6 wells shall be shut down and no gas produced therefrom beginning as of June 1, 1943, until otherwise ordered by the Commission.

2. That all other wells producing gas from the Medrano Sand of the West Cement Field shall be restricted to fifty per cent of their daily allowable production for the last fifteen days of the month of April 1943, as shown by the records of the Corporation Commission, and allocated pursuant to the Commission's Order No. 16170 issued on January 4, 1943, and subsequent orders, to be effective as of 7 o'clock, A. M., June 1, 1943, until June 15, 1943, at 7 o'clock, A. M., unless otherwise ordered by the Commission.

3. That this order is a temporary order and issued as an emergency under the conditions fully set out herein and issued without notice by publication, and this cause be, and it is hereby, set down for hearing on June 14, 1943, at 10 o'clock, A. M., in the Commission's court room in the Capitol Office Building, Oklahoma City, Oklahoma, and due and lawful notice thereof shall be given by publication, at which time the Commission will hear testimony for the purpose of approving and confirming this temporary order and for the further purpose of receiving testimony on which to base rules and regulations for the prevention of waste, protection of correlative rights, and provide for ratable taking in said pool, at which time and place all persons interested should appear and adduce evidence; that unless otherwise ordered by this Commission this temporary order shall be of no force and effect after June 15, 1943.

Done and performed by the Corporation Commission at its offices in the Capitol Office Building, Oklahoma City, Oklahoma, this 1st day of June, 1943.

Corporation Commission of the State of Oklahoma, Reford Bond, Chairman; Ray O. Weems, Vice-Chairman; Wm. J. Armstrong, Commissioner.

Attest: Carl B. Mitchell, Secretary. (Seal.)

[fol. 35] EXHIBIT 18

BEFORE THE CORPOLATION COMMISSION OF THE STATE OF OKLAHOMA

Cause C D No. 849

Order No. 16462

In the Matter of the APPLICATION OF WALKER T. POUND, Conservation Officer, for Orders, Rules and Regulations Governing the Production of Oil and Gas in the WEST CEMENT GAS FIELD

Report of the Commission

This cause came on for hearing before the Corporation Commission of the State of Oklahoma in its court room in the Capitol Office Building, Oklahoma City, Oklahoma, on the 14th day of June, 1943, at 10 o'clock, A. M., upon an application filed by the Conservation Officer and pursuant to an order of the Commission setting the cause for hearing and notice published as required by law; at which hearing the Conservation Officer and Conservation Attorney were present and the following appearances were made: Magnolia Petroleum Company by W. R. Wallace; Phillips Petroleum Company by E. G. DeParade; Ray Stephens Incorporated by Ray Stephens and C. W. Stephens; Darby Petroleum Company by D. C. Bothwell; Gulf Oil Corporation by D. D. Adams; and the Petroleum Administration for War by C. C. Brown and D. W. Logan; whereupon evidence was adduced, and the Commission, being fully advised in the premises, granted the following order, finding as follows:

Findings

1. That notice by publication of the filing of the application herein, the time and place of hearing thereon, and the purpose of said hearing, has been regularly given in all [fol. 36] respects as required by law, and the Commission has jurisdiction of the subject matter embraced in said ap-

plication and of the parties interested therein, and jurisdiction to issue and promulgate the hereinafter prescribed order.

2. That several orders have heretofore been issued by this Commission for the purpose of preventing waste, protection of correlative rights, and providing for the ratable taking of gas from the Medrano Sand of the West Cement Field, and on the 13th day of May, 1943, the Commission issued its Order No. 16399 in Cause C D No. 842, which required all producing wells in the Medrano Sand to be shut down for a period of fifteen days, beginning as of the 18th day of May, 1943; that on the 1st day of June the Commission issued its temporary order in this cause the same being Order No. 16422, which in substance restricted the production of the Medrano Sand wells from the 1st day to the 15th day of June to fifty per cent of their daily allowable production for the last fifteen days of April, 1943, with the exception of the Ray Stephens Wilhite #3, the Magnolia Henley #2 and Medrano #6 wells, which were ordered shut down and no gas produced therefrom beginning as of June 1, 1943, until further order of the Commission.

3. That during said shut-down period and the period during which the wells have been restricted to fifty per cent of their April production, the Conservation Department and the Bureau of Mines and the operators in said pool have made numerous tests and exhaustive study of the [fol. 37] conditions existing in said pool, but it is still undetermined whether the oil wells located on the south edge of the Medrano Sand of the West Cement Field are producing from the same common source of supply as the gas wells; that there is considerable indication that at least part of the gas wells are producing from the same horizon as the oil wells, and in order to protect the oil wells and to prevent waste in the production of oil, it is necessary that additional information be obtained, and it is necessary to continue the restrictions on gas production in order to avoid unreasonable dissipation of gas pressure necessary for producing the oil.

4. That it appears that the pressure in the gas wells is

materially declining, and that waste may occur if said wells are permitted to produce at their full capacity; that in order to prevent the waste of both oil and gas in the field and to obtain the information necessary to conserve the gas energy, the production of gas from said field should be restricted to fifty per cent of its production during the last fifteen days of April, 1943, and said restriction should continue until further order of this Commission; provided, however, that the Magnolia Henley #2 well should be shut in entirely until the 1st day of July, 1943, and that the Ray Stephens Wilhite #3 and the Magnolia Medrano #6 wells should be allowed to produce only their current daily allowable until the 1st day of July, 1943.

Order

It is therefore ordered by the Corporation Commission [fol. 38] of the State of Oklahoma as follows:

1. That the production of gas from the Medrano Sand of the West Cement Field shall be restricted to fifty per cent of its daily allowable production for the last fifteen days of the month of April, 1943, as shown by the records of the Corporation Commission, and allocated pursuant to the Commission's Order No. 16170 and subsequent orders equitably and ratably among the wells in said pool; provided, however, that the Magnolia Henley #2 well shall be shut in and not allowed to produce any gas until the 1st day of July, 1943, and the Ray Stephens Wilhite #3 and Magnolia Medrano #6 wells shall be allowed to produce only their daily current allowable from the date hereof until the 1st day of July, 1943.

2. That the temporary order issued by this Commission on the 1st day of June, 1943, same being Order No. 16422, issued in the above styled cause, be, and the same is hereby, approved and confirmed.

3. That this order shall remain in force and effect from and after this date until further order of the Commission after application filed and due notice given by publication as required by the laws of this State and the rules and regulations of the Commission.

Done and performed by the Corporation Commission at its offices in the Capitol Office Building, Oklahoma City, Oklahoma, this 14th day of June, 1943.

[fol. 39] Corporation Commission of the State of Oklahoma, Reford Bond, Chairman; Ray O. Weems, Vice-Chairman; Wm. J. Armstrong, Commissioner.

Attest: Carl B. Mitchell, Secretary. (Seal.)

[fol. 40] EXHIBIT 19

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

Cause C D No. 865

Order No. 16682

In the Matter of the APPLICATION OF WALKER T. POUND, Conservation Officer, for Amendment of the Rules and Regulations Governing the MEDRANO SAND of the WEST CEMENT FIELD, and Allocation of Production from Said Field and the Lower Charlson Sand of the Chickasha Field for the Month of October 1943

Report of the Commission

This cause came on for hearing before the Corporation Commission of the State of Oklahoma in its court room in the Capitol Office Building, Oklahoma City, Oklahoma, on the 30th day of September, 1943, at 10 o'clock, A. M., upon an application filed by the Conservation Officer and pursuant to order of the Commission setting the same for hearing and notice published as required by law, at which hearing the Conservation Officer and Conservation Attorney were present and the following appearances were made: Phillips Petroleum Company by E. G. DeParade; Gulf Oil Corporation by R. S. Knappen; Ray Stephens, Incorporated, by J. B. Dudley; Darby Oil Company by D. C. Bothwell; Amerada Petroleum Corporation by C. V. Millikan;

Sinclair Prairie Oil Company by O. E. Dougherty; Anderson-Prichard Oil Corporation by W. H. Brown; Magnolia Petroleum Company by W. R. Wallace; and Oklahoma Natural Gas Company by Gilbert Estill; whereupon testimony was heard and the Commission continued the cause for further hearing on the 1st day of October, 1943, at 10 o'clock, A. M., when further testimony was heard, and the Commission made the order hereinafter prescribed and continued the cause for hearing on all other matters involved to the 11th day of October, 1943, at 10 o'clock, A. M.

Now, on this 1st day of October, 1943, the Commission, having considered the testimony introduced in this cause as of this date, and being otherwise fully advised, finds as follows:

Findings

1. That notice by publication of the filing of the application herein, the time and place of the hearing thereon and the purpose of said hearing, has been regularly given in all respects as required by law, and the Commission has jurisdiction of the subject matter embraced in said application and of the parties interested therein, and jurisdiction to issue and promulgate the hereinafter prescribed order.

2. That on the 4th day of January, 1943, the Commission promulgated its Order No. 16170 in Cause C. D. No. 822, which prescribed rules and regulations governing production from the Medrano Gas Sand of the West Cement Field, and on the 13th day of April, 1943, the Commission amended said order by its Order No. 16342 issued in Cause C D No. 837, and thereafter issued its allocation orders based thereon.

3. That since the promulgation of said Order No. 16170 it appears from the drilling of additional wells in said field and from geological, engineering, and other scientific information that the boundaries of the acreage which is productive of gas only, as defined in said Order No. 16170, should be changed, and that said productive gas acreage should be as defined by Exhibit "A", attached hereto and made a part hereof.

[fol. 41] 4. That from the evidence introduced in this cause it appears that the Medrano Sand of the West Cement

Gas Field and the Medrano Sand of the West Cement Oil Field (heretofore designated in Order No. 16388 as the Southwest Cement Oil Field) are both in fact one common source of supply, and that all wells located within the area shown on Exhibit "A" are wells producing gas only from said Medrano Sand, and that all other wells producing from said Medrano Sand are producing oil; that said field should hereafter be known as the West Cement Medrano Pool.

5. That since there are wells in said common source of supply which produce gas only and other wells that produce oil, in order to protect the oil reserves, prevent waste, and insure the greatest ultimate recovery of oil, it is necessary to restrict the gas production from those wells producing gas only, as hereinafter set out in this order.

6. That in order to fix the allocation to wells producing gas only based upon the amount of production during the month immediately preceding, it is necessary that reports thereon be filed by the takers and purchasers with the Corporation Commission on or before the 5th day of the succeeding month, and as soon thereafter as possible the Conservation Department should issue its allocation schedules for the month based upon the actual production for the preceding month.

7. That all operators in said field agree that this order is necessary and proper and should be issued by the Commission.

Order

It is therefore ordered by the Corporation Commission of the State of Oklahoma as follows:

1. The productive area of the gas producing portion of the West Cement Medrano Pool is hereby defined as shown on Exhibit "A" attached hereto, and made a part of this order.

2. The total production from all wells producing gas only in the West Cement Medrano Pool for the month of October 1943 shall be restricted to one-fourth of the amount allowed to be produced during the last fifteen days of April 1943, same being one-half of the amount allowed to be produced during the months of August and September, 1943, which is 23,626 MCF per day; that said amount shall be

allocated to the wells producing gas only pursuant to the orders of this Commission, taking into consideration the overage and the underage charged or credited to each well.

3. Takers and purchasers of gas from those wells producing gas only in said pool shall file reports with the Conservation Department of the amount of gas produced from each well during any month on or before the 5th day of the succeeding month, and as soon as possible thereafter the Conservation Department shall issue reports showing the allocation to each well for the current month, using the production of the immediately preceding month to calculate the overage and underage.

Done and performed by the Corporation Commission at its offices in the Capitol Office Building, Oklahoma City, Oklahoma, this 1st day of October, 1943.

Corporation Commission of the State of Oklahoma, Reford Bond, Chairman; Ray O. Weems, Vice-Chairman; Wm. J. Armstrong, Commissioner. (Seal.)

Attest: Carl B. Mitchell, Secretary.

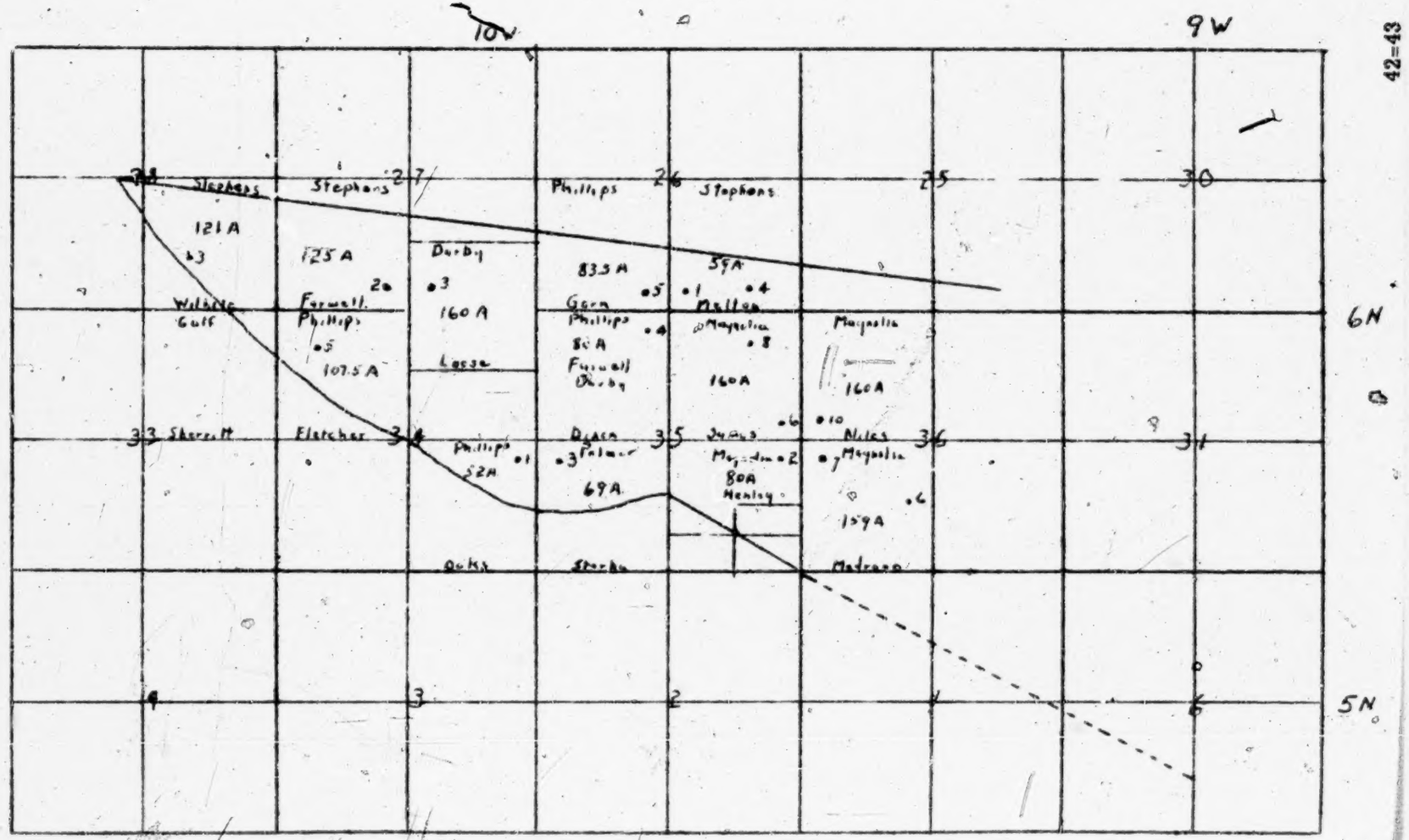
(Here follows 1 Photolithograph, side folio 42-43, Exhibit "A" to Exhibit 19)

EXHIBIT A TO EXHIBIT 19

CEMENT WEST MEDWAY POOL

EXHIBIT "A"

15798A



[fol. 44] EXHIBIT 20

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

Cause C D No. 865

Order No. 16683

In the Matter of the Application of WALKER T. POUND, Conservation Officer, for Amendment of the Rules and Regulations Governing the MEDRANO SAND of the WEST CEMENT FIELD, and Allocation of Production from Said Field and the Lower Charlson Sand of the Chickasha Field for the Month of October, 1943

Report of the Commission

This cause came on for hearing before the Corporation Commission of the State of Oklahoma in its court room in the Capitol Office Building, Oklahoma City, Oklahoma, on the 30th day of September, 1943, at 10 o'clock, A. M., upon an application filed by the Conservation Officer and pursuant to order of the Commission setting the same for hearing and notice published as required by law, at which hearing the Conservation Officer and Conservation Attorney were present and the following appearances were made: Phillips Petroleum Company by E. G. DeParade; Gulf Oil Corporation by R. S. Knappen; Ray Stephens, Inc., by J. B. Dudley; Darby Oil Company by D. C. Bothwell; Amerada Petroleum Corporation by C. V. Millikan; Sinclair Prairie Oil Company by O. E. Dougherty; Anderson-Prichard Oil Corporation by W. H. Brown; Magnolia Petroleum Company by W. R. Wallace; and Oklahoma Natural Gas Company by Gilbert Estill; whereupon testimony was heard and the Commission continued the cause for further hearing on the 1st day of October, 1943, at 10 [fol. 45] o'clock, A. M., at which time the Commission made certain orders and continued the cause for hearing on the 11th day of October, 1943, at 10 o'clock, A. M., for the taking of additional testimony, and again continued the cause for hearing on the 12th day of October, 1943, at 1:30 o'clock, P. M., when the Commission closed the case and

took the same under advisement as to all matters not decided on the 1st day of October.

Now, on this 13th day of October, 1943, the Commission, having considered all of the evidence in this cause and being fully advised in the premises, finds as follows:

Findings

1. That notice by publication of the filing of the application herein, the time and place of the hearing thereon, and the purpose of said hearing, has been regularly given in all respects as required by law, and the Commission has jurisdiction of the subject matter embraced in said application and of the parties interested therein, and jurisdiction to issue the hereinafter prescribed order.

2. That on the 4th day of January, 1943, the Commission promulgated its Order No. 16170 in Cause C D No. 822, which prescribed general rules and regulations governing production of gas from the Medrano Sand of the West Cement Field, and on the 13th day of April, 1943, the Commission amended same by its Order No. 16342 in Cause C D No. 837; and on the 28th day of April, 1943, the Com-[fol. 46] mission issued its Order No. 16388 in Cause C D No. 843, governing oil production from the Southwest Cement Oil Field.

3. That it now appears, as set out in the order issued in this cause on October 1, 1943, that the Medrano Sand of the West Cement Gas Field and the Medrano Sand of the West Cement Oil Field (heretofore designated in said Order No. 16388 as the Southwest Cement Oil Field) are both in fact one common source of supply; that all wells located within the area shown on Exhibit "A" attached hereto and made a part hereof, are wells producing gas only from said Medrano Sand, and that all other wells producing from said Medrano Sand are producing oil; that said field should hereafter be known as the West Cement Medrano Pool.

4. That in the years 1943 and 1935 the Oklahoma Legislature enacted statutes authorizing the Corporation Commission to promulgate rules and regulations governing the production of natural gas in order to prevent waste, provide for ratable taking, and protect correlative rights;

that in the years 1933 and 1935 the Legislature enacted statutes authorizing the Commission to promulgate rules and regulations for like purposes in the production of oil and gas, which statutes pertain principally to the production of oil and specifically define what constitutes the waste of gas produced from a common source of supply of oil.

5. That the orders above mentioned should be amended and revised and new regulations are necessary in order to carry out the purposes of the statutes of Oklahoma, and all of the rules and regulations hereinafter prescribed are [fol. 47] pursuant to the authority vested in the Commission by the statutes above mentioned.

Overage and Underage

6. That the manner and method of computing overage and underage by the Conservation Department under previous orders of this Commission has been fair and equitable to all producers, purchasers and takers of gas in said pool, and the method so employed is hereby approved by this Commission, and the present standing of all wells as of October 1, 1943, should remain unchanged as shown by the records of the Commission.

7. That certain wells are overproduced more than their October, 1943, current monthly allowable, to-wit: Phillips Petroleum Company Garn #5; Magnolia Petroleum Company Medrano #7; Ray Stephens, Inc., Melton #1 and #4; Wilhite #3 and Farwell #2; that the Phillips well and the Ray Stephens wells above named are at this time shut in and have been producing no gas since on or about the 17th day of September, 1943, and that each of said wells and the Magnolia Petroleum Company Medrano #7 well should remain shut in until all of the overage shown by the records of the Commission is made up; that upon failure of the operator so to keep said wells shut in, the Conservation Officer should shut in the same.

8. That in the future any well having an overage of more than its monthly current allowable, as hereinafter defined, should be immediately shut in by the operator until such overage is made up by future allocations; and in event [fol. 48] such operator fails to shut in said well, the Con-

servation Officer should shut in the same until such overage is made up.

9. That any underage which accumulates to any well producing gas only should be made up within three months from time of its accumulation, and should be made up within said time in addition to its current monthly allowable based upon its daily production; and in event it is not made up within the time and in such manner same should be canceled; provided that, no well should produce underage in excess of an amount equal to its monthly current allowable, as hereinafter fully set out in this order.

10. That the manner of determining each well's current allowable beginning with November 1, 1943, should be as hereinafter set out in this order, and such method will be fair to all operators and persons in said pool.

11. That the Medrano Sand should be separated and segregated from all other producing horizons, and no well should be allowed to produce gas or be open when the well is open in the Medrano Sand and any other source of supply at the same time; that the Phillips Petroleum Company Garn #5 and Ray Stephens, Inc., Farwell #2 are at this time open in the Medrano gas producing formation and in other formations; and the producing horizons in said wells should be immediately separate and segregated and no gas produced therefrom until such segregation is effected, which should be done within a reasonable time whether any gas is produced or not.

[fol. 49] 12. That the evidence fails to disclose that the Ray Stephens, Inc., Melton #4 well is not producing gas from the Medrano Sand; that from all of the geological and scientific evidence introduced it appears that the production or lack of production of gas from other wells producing in the Medrano Sand affect the production and pressure of said Melton #4 well, and that if there is no break between the formation from which the Melton #4 is producing and the other wells in the Medrano Sand, there are other wells drilled into and now producing from both horizons, which would cause migration from one well to the other, even though the horizons were separated originally; that it has been considered by the Commission from the time the wells were first brought in that the Melton #4 was a Medrano Sand well, and it now appears that it would

best protect the interests of all parties concerned to leave the well classified as a Medrano well.

13. That the method employed by the Chief Clerk of the Conservation Department in determining the allowables for all gas wells producing in the Medrano Sand during the month of May, 1943 was the correct method and was fair and equitable as between all the operators and purchasers, and that the method should be approved by the Commission.

14. That all rules and regulations included in Order No. 16170, as amended by Order No. 16342, which are not specifically amended by this order, should continue in force and effect and be made a part of this order.

[fol. 50] 15. That in order to clarify Order No. 16388, same should be amended as hereinafter set out, and the findings of said order are hereby adopted as a part of the findings in this cause.

Gas-Oil Ratio

16. That in order to conserve the reservoir energy of the oil wells and to insure the greatest ultimate recovery of oil therefrom, it is necessary that the Commission establish a gas-oil ratio therefor, and that the ratio as hereinafter set out in this order will prevent waste and will protect the correlative rights of all interested parties and be fair and equitable.

17. That in allocation of gas to wells producing gas only in said pool, the territory as shown by Exhibit "A" attached hereto should be effective from and after October 1, 1943, until further order of the Commission.

18. That all of the findings in Order No. 16170, as amended by Order No. 16342, which are not herein specifically changed or modified, are hereby adopted as part of the Findings in this order.

19. That from the evidence introduced in this cause it appears that in order to carry out the provisions of the statutes of the State of Oklahoma, in order to prevent the waste of oil and gas in said West Cement Medrano Pool, to protect the reservoir energy and insure the greatest ultimate recovery, and to provide for ratable taking of both oil and gas therefrom and to protect the correlative rights

[fol. 51] of all persons interested therein, it is necessary to amend the rules and regulations heretofore promulgated and to promulgate additional rules and regulations as hereinafter fully set out in this order; that the order hereinafter promulgated will as nearly as possible insure to each producer, royalty and lease owner, opportunity to obtain from the common source of supply the approximate amount of oil and gas that originally underlaid the surface of his land, and to produce currently his ratable and equitable share of same, and will be fair and equitable to all persons interested.

20. That the order hereinafter prescribed is divided into two parts: Wells Producing Gas Only, and Oil Wells.

Order

It is therefore ordered by the Corporation Commission of the State of Oklahoma as follows:

1. The West Cement Medrano Pool, located in Caddo County, State of Oklahoma, is one common source of supply in which some wells already drilled produce gas only and some produce oil.

Gas Production

2. Effective October 1, 1943, the productive area of said common source of supply which produces gas only shall be all of that acreage located within the limits of said common source of supply as found and determined by the Commission on October 1, 1943, and reflected by Exhibit A, hereto attached and made a part of this order.

[fol. 52] 3. The Medrano Sand shall be separated from all other gas producing horizons, and no well shall produce gas until such segregation is effected. If any gas well is open in the Medrano Sand and any other producing horizon, it must be segregated within a reasonable time even though no gas is produced therefrom. The Phillips Petroleum Company Garn #1 well and Ray Stephens, Inc., Farwell #2 well shall not be permitted to produce gas until the Medrano Sand is segregated, and such segregation shall take place within a reasonable time from the date hereof even though no gas is produced therefrom.

4. Each well producing gas only from said Medrano Sand shall have allocated to it each day its ratable proportion of all the gas allocated by the Commission to said common source of supply, as reflected under the calculation of the allocation formula herein prescribed, which allocation formula shall be "productive acreage" times "natural flow potential" times "pressure factor" for each individual well.

5. *Acreage Factor*—Each operator of wells in the gas producing area of said Medrano Pool shall divide his acreage into units; and a "unit" as used in this order shall be any square or rectangle of surface acreage of not to exceed 160 acres and upon which there exists only one well producing gas only from the Medrano Sand. If more than one well is located on any tract of 160 acres, or less, the units in said tract shall be of equal surface acreage.

[fol. 53] "Productive acreage" to be used as a factor in the allocation formula prescribed in this order shall be such portion of the total acreage of the unit as is within the productive area of the gas producing portion of the Medrano common source of supply, as set out in Exhibit "A."

6. Potential Factor—"Natural flow potential" of a well producing gas only shall be that volume of gas capable of being produced in a twenty-four hour period measured at standard conditions of sixty degrees (60°) Fahrenheit temperature, and at four (4) ounce pressure above atmospheric pressure assumed to be 14.4 pounds per square inch pressure, or at 14.65 pounds per square inch pressure absolute, and with atmospheric pressure at the sand face as provided by the Bureau of Mines Monograph Seven back pressure method, corrected to such volume as a seven inch (7") outside diameter twenty-four pound (24#) casing will deliver at the well head against atmospheric pressure.

Natural flow potential tests taken as hereinabove provided shall be made by or under the supervision of and in the presence of an authorized representative of the Oil and Gas Conservation Department, and the official results of said tests shall be determined by said department. Such tests shall be filed of record in the offices of the Conservation Department; and all subsequent natural flow potential tests shall be taken by or under the supervision of and

in the presence of an authorized representative of said Department at such times as may be provided by law and directed by order of the Corporation Commission, or as [fol. 54] may be agreed upon by all of the operators of wells in the Medrano Pool, with the approval of the Conservation Officer or his representative; provided that a new potential may be taken on any well or wells at the request of the owner or operator, in which event the open flow test so taken shall be effective regardless of whether it is more or less than the then effective test. Before taking such test, notice must be given to all other operators and purchasers in sufficient time to give them opportunity to be present. All such subsequent natural flow potentials shall be effective as of the first day of the month succeeding the date on which the potential is taken.

7. Pressure Factor—"Pressure factor" of a well producing gas only shall be the value obtained by taking the maximum shut-in casinghead pressure of each well minus eighty one-hundredths (0.80) times the areal weighted average shut-in casinghead pressure of the pool divided by the areal weighted average shut-in casinghead pressure of the pool minus eighty one-hundredths (0.80) times the areal weighted average shut-in casinghead pressure of the pool, or as expressed by the fraction: $\frac{P - 0.80F}{F - 0.80F}$ "P" of said fraction being the maximum shut-in casinghead pressure in pounds per square inch gauge obtained within a twenty-four (24) hour shut-in period; and "F" of said fraction being the areal weighted shut-in casinghead pressure in pounds per square inch gauge of all Medrano Sand gas wells in the pool. The areal weighted average shut-in casinghead pressure shall be determined [fol. 55] by the summation of the quantities obtained by multiplying the maximum shut-in casinghead pressure of each Medrano gas well by the number of productive acres in each well's acreage unit, all divided by the summation of the number of productive acres in each well's acreage unit.

Shut-in casinghead pressures for use in "pressure factor" may be measured by a deadweight test gauge at the casinghead, or may be calculated at each operator's option

by obtaining the pressure at the sand base or bottom casing perforation in the Medrano Sand with a bottom hole pressure bomb and by deducting therefrom the weight of a column of dry gas extending from the casinghead to the point of such bottom hole pressure measurement.

Shut-in casinghead pressures to be used in the pressure factor for gas allocation purposes shall be determined each calendar month between the 20th and 30th days of the month. Same shall be filed in the office of the Conservation Department on or before the first day of the succeeding month. The monthly shut-in casinghead gas pressure shall be taken by or under the supervision of and in the presence of an authorized representative of the Oil and Gas Conservation Department, and the pressure so obtained shall be substituted in the pressure factor of the gas allocation formula of each well to allocate the gas production for the succeeding month.

8. Tubing—All gas wells in the Medrano Sand shall be equipped with tubing in such manner that the wells can be properly conditioned for the taking of natural flow [fol. 56] potential tests. All tubing shall be at least two inches (2") in diameter and free from any obstruction that would prevent the use of a bottom hole gauge. Said wells shall be equipped for the taking of bottom hold pressure gauges at the face of said sand.

9. Current Allowables—Each well shall have its ratable share of the allocation set up by the Commission based on the allocation formula hereinbefore prescribed. The daily production from wells producing gas only in said common source of supply as determined by the Commission shall be multiplied by the number of days in the ensuing month to determine the monthly allocation for each well.

10. Reports—Each taker and purchaser of gas from wells producing gas only shall file with the Conservation Department reports of the gas taken from each well during any month on or before the 4th day of the succeeding month.

11. Overage and Underage—Effective November 1, 1943, all overproduction or underproduction of gas occurring in any month as determined by calculations on the allocation formula prescribed in this order shall be adjusted in

the allowable for said well for the ensuing month. All overage shall be deducted from the well's current allowable, and any well that is overproduced as much as its monthly current allowable shall be shut-in immediately by the operator, and no gas shall be produced therefrom until said overage is made up. In case an operator fails or refuses to shut-in the said well, the Conservation Officer [fol. 57] is hereby directed to shut in the well, place a seal thereon, and keep the same shut in until the overage is completely made up. In producing underage, no well shall produce accumulated underage in any one month in an amount in excess of an amount equivalent to said well's current monthly allocation; and underage that may hereafter accrue to a well in any month which is not produced by said well within three succeeding months in addition to said well's current monthly allocations shall be canceled, unless otherwise specifically ordered by the Commission.

12. Any well hereafter completed in the Medrano Sand shall, upon completion in said separate source of supply, be subject to all of the provisions of this order, except as hereinafter provided. The gas allowable for any such well shall become effective on the day that the connections with the pipeline are made and it begins producing gas; and after the natural flow potential test and casinghead pressure for gas allocation purposes has been determined, if it appears at the first hearing thereafter before the Commission that said well during said period has produced more or less than its just proportion, then same shall be adjusted in the same manner as provided above for adjustment in the case of underproduction or overproduction; provided that, in making the allocation for any such well not more than a fifteen day allocation shall be allowed for the period from the date when connection with the pipeline is made and it begins producing gas to the date the [fol. 58] potential test is made.

13. In order to carry out the provisions of this order, it is necessary that all operators, lessees, contractors, drillers, and perforaters, and others who perform any service or keep any reports furnish to the Oil and Gas Conservation Department, or to any of its representatives, a complete report of their records in regard to the physical

status and log of the well, and especially depths and thicknesses of the sand, perforation points, casing records, cementing records, and like information. Upon request of the Conservation Officer such reports shall be filed in the office of the Conservation Department.

14. Gas allocation volumes shall be based upon a correction of sixty degrees (60°) Fahrenheit temperature and two pounds per square inch gauge above an assumed atmospheric pressure of fourteen and four-tenths (14.4) pounds per square inch absolute or to sixteen and four-tenths (16.4) per square inch absolute pressure.

15. Each operator in said pool shall select a representative to be approved by the Conservation Officer, to serve on an Operators Committee, and the Conservation Officer shall request the Bureau of Mines to select a representative to serve on said committee. Said Operators Committee shall be given an opportunity to be present and observe the taking of all natural flow gauges and casinghead pressure tests, and to make recommendations and render all possible assistance to the Conservation Department. The [fol. 59] Conservation Officer, or his representative, shall make every possible effort to secure the unanimous approval of the Operators Committee, including the representative of the Bureau of Mines, as to all natural flow gauges and casinghead pressure tests taken by him; but in case of failure to agree, the determination of the Conservation Officer shall be final and effective.

16. Nothing in this order shall affect the rights of any operator to present any claim to this Commission or to any court for failure to comply with the provisions of the law concerning the price to be paid for gas in said pool; and nothing in this order shall affect or prejudice the rights of any operator, producer, or taker of gas to claim an adjustment before this Commission or before any court because of the failure of any other person to take gas ratably prior to April 16, 1943.

17. The Commission shall hold regular hearings, after due and proper notice to all producers and purchasers, at which time the Commission shall determine the amount of gas to be produced from the wells that produce gas only in the West Cement Medrano Pool.

Oil Production

18. All oil wells drilled into the West Cement Medrano Pool shall be equipped with not less than 300 feet of surface casing, cemented from top to bottom. The size of the flow string of casing shall be at the discretion of the operator, and same shall be set through the producing formation or at the bottom of the hole and cemented with not less [fol. 60] than 1,000 sacks of cement, and not less than 30 feet of cement shall be left inside said casing immediately above the casing shoe to serve as a plug. The pipe shall be perforated so that the production will come only through the perforations. If an operator runs a string of casing other than 7", it is understood that he shall not receive any advantage, nor will disadvantages be considered, in taking potentials and making other rules and regulations governing this pool. If an operator sets a flow string of casing above the base of the Medrano Sand and later deepends the well, then a liner shall be set in the additional hole, and same shall be cemented and perforated and the cement plug left in, as required for the original flow string.

19. All production and potentials shall be through 2½" tubing, the bottom of which shall be set not higher than the top of the producing formation.

20. Gas-Oil Ratio—There is hereby established for the production of oil in said pool a gas-oil ratio of not to exceed 2,000 cubic feet of gas to 1 barrel of oil produced; provided, however, if the gas is delivered into a pipeline and used for ordinary purposes, the gas-oil ratio shall not exceed 3,000 cubic feet of gas to 1 barrel of oil. The gas-oil ratio shall be determined by the Conservation Officer by not to exceed an actual 24-hour gauge taken each month in the manner in which an operator will normally produce his allowable through a meter of standard and [fol. 61] accepted installation, the volume corrected as is now customary for gas potentials in the pool; and during the same period the amount of oil produced shall be measured in tanks.

The allowable production of each well with a high gas-oil ratio shall be multiplied by the gas-oil ratio herein fixed, and divided by the actual gas-oil ratio of each well

to determine the number of barrels of oil to be produced from each well. "Allowable production" as used herein shall mean the amount of oil which the Commission allocates to any well, or its full production if the well is incapable of making such allowable.

22. The amount of oil to be produced from wells in said pool shall be governed by the monthly allocation orders of the Commission.

23. The Medrano Sand, as used in this order, shall for all purposes include the conglomerate sand found at the base of the Medrano Sand.

24. All parts of this order, unless otherwise specifically stated, shall be effective as of October 1, 1943.

25. Jurisdiction over this cause is hereby retained for the purpose of changing, modifying, or altering this order if at any further hearing in this cause or from other evidence adduced before the Commission it appears that such modification should be made.

26. The several provisions of this order are separable and the validity of any one is in nowise dependent upon [fol. 62] the validity of any other. If any provision, section, paragraph, sentence, or clause of this order shall be held to be invalid or void for any reason, the same shall in no manner affect the validity of any other provision of this order.

Done and performed by the Corporation Commission at its offices in the Capitol Office Building, Oklahoma City, Oklahoma, this 13th day of October, 1943.

Corporation Commission of the State of Oklahoma.
Reford Bond, Chairman; Ray O. Weems, Vice-Chairman; —— ——, Commissioner. (Seal.)

Attest: Carl B. Mitchell, Secretary.

[fol. 63] EXHIBIT 21

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

Cause C D No. 870

Order No. 16771

In the Matter of the Application of Walker T. Pound, Conservation Officer, for Allocation of Gas in the West Cement Medrano Pool and the Lower Charlson Sand of the Chickasha Field for the Month of December 1943, and Amendment of Rules and Regulations Governing Said Fields—AMENDMENT OF ORDER No. 16683

Report of the Commission

This cause came on for hearing before the corporation Commission of the State of Oklahoma in its court room in the Capitol Office Building, Oklahoma City, Oklahoma, on the 30th day of November, 1943, at 11 o'clock, A. M., upon the application of the Conservation Officer and pursuant to an order of the Commission setting the cause for hearing and notice thereof published as required by law; at which hearing the Conservation Officer and Conservation Attorney were present and the following appearances were made: W. T. Crandall for Sinclair Prairie Oil Company; T. L. Regan for Stanolind Oil and Gas Company; R. E. Cullison for Cities Service Gas Company; E. G. DeParade and C. W. Binckley for Phillips Petroleum Company; R. B. Curran for The Carter Oil Company; J. Schoeppel and R. G. Holland for Ray Stephens, Incorporated; and E. C. McAninch for Oklahoma Natural Gas Company; whereupon evidence was introduced and the Commission made the following order, finding as follows:

Findings

1. That notice by publication of the filing of the application herein, the time and place of the hearing thereon, and the purpose of said hearing, has been regularly given in all respects as required by law, and the Commission has jurisdiction of the subject matter embraced in said application and of the parties interested therein, and jurisdiction to issue and promulgate the hereinafter prescribed order.

2. That on the 13th day of October, 1943, the Commission promulgated Order No. 16683 in Cause C D 865, paragraph 6 of which provides for the manner and method of taking natural flow potentials of wells producing gas only in the West Cement Medrano Pool, which method requires in substance that all such gas wells shall take potentials through tubing.

3. That in said pool there are some wells producing gas only from the Medrano Sand and from other sands found at a lower depth; that in order to take potentials on such dually completed wells it is necessary to raise the tubing from the lower sand into the Medrano Sand, which process is very hazardous and costly; and it appears that in such dually completed wells it would be to the best interest of all parties and would be fair and equitable to permit potentials in the Medrano Sand to be taken through the annular space; that taking of potentials through the annular space, as hereinafter set out, would fairly represent the capacity of the wells to produce from the Medrano Sand in those wells which are dually completed.

4. That all the operators in said Medrano Pool who were present at the hearing agree that the method hereinafter set out would be the best means for determining the potentials and would be fair and equitable to all operators, producers, royalty owners, and others interested.

[fol. 64] 5. That Paragraph 6 of Order No. 16683 should be amended as hereinafter set out but in all other respects said order should remain in force and effect.

Order

It is therefore ordered by the Corporation Commission of the State of Oklahoma as follows:

1. That Paragraph 6 of Order No. 16683, heretofore issued in Cause C D No. 865, be, and the same is hereby, amended by addition of the provisions for potentials on dually completed wells in the West Cement Medrano Pool, to read as follows, to-wit:

> "6. *Potential Factor*—'Natural flow potential' of a well producing gas only shall be that volume of gas

capable of being produced in a twenty-four hour period measured by standard conditions of sixty degrees (60°) Fahrenheit temperature, and at four (4) ounce pressure above atmospheric pressure assumed to be 14.4 pounds per square inch pressure, or at 14.65 pounds per square inch pressure absolute, and with atmospheric pressure at the sand face as provided by the Bureau of Mines Monograph Seven back pressure method, corrected to such volume as a seven inch (*6"*) outside diameter twenty-four pound (24#) casing will deliver at the well head against atmospheric pressure.

"In wells that are dually completed, potentials in the Medrano Sand shall be taken through the annular space, and the absolute open flow of each connected well in the field shall be determined as follows: The well shall be produced into the pipeline for six (6) hours, during which time the working pressure at the well head shall be maintained at seventy-five per cent (75%) of the shut in well head pressure of the well, expressed in pounds per square inch gauge, or as closely thereto as operating conditions in the field will permit. In no case shall the working well head pressure during the test be more than ninety per cent (90%) of the shut in well head pressure of the well being tested, unless it can be shown to the satisfaction of the Conservation Officer that it is impractical to maintain the pressure within the above described limits and that the accuracy of the test will not be unduly affected by failure to do so. Flow shall be measured by approved meter throughout the six-hour test period, and the well head pressure shall be measured by dead weight gauge at the close of the test period. The rate at which the well is producing at the end of six hours shall be considered the stabilized producing rate corresponding to the working well head pressure existing at that time, provided such rate is not greater than the average producing rate for the entire six-hour period. The observed stabilized producing rate shall be converted to absolute open flow by use of the following formula:

$$AOF = R \left\{ \frac{P_t^2}{P_t^2 - P_s^2} \right\} .85$$

AOF—Absolute Open Flow
R —Observed producing rate
P_t —Shut-in pressure of the well, pounds absolute at the face of the sand
P_s —Working well head pressure at rate R, pounds absolute at the face of the sand

Shut-in well head pressure shall be measured by dead weight gauge after the well has been shut in for twenty-four hours.

[fols. 65-66] "Natural flow potential tests taken as hereinabove provided shall be made by or under the supervision of and in the presence of an authorized representative of the Oil and Gas Conservation Department, and the official results of said tests shall be determined by said department. Such tests shall be filed of record in the offices of the Conservation Department; and all subsequent natural flow potential tests shall be taken by or under the supervision of and in the presence of an authorized representative of said Department at such times as may be provided by law and directed by order of the Corporation Commission, or as may be agreed upon by all of the operators of wells in the Medrano Pool, with the approval of the Conservation Officer or his representative; provided that, a new potential may be taken on any well or wells at the request of the owner or operator, in which event the open flow test so taken shall be effective regardless of whether it is more or less than the then effective test. Before taking such test, notice must be given to all other operators and purchasers in sufficient time to give them opportunity to be present. All such subsequent natural flow potentials shall be effective as of the first day of the month succeeding the date on which the potential is taken."

2. That with the exception of the addition of the provisions for taking potentials on dually completed wells as

above set out, Order No. 16683 shall remain in full force and effect.

Done and performed by the Corporation Commission at its offices in the Capitol Office Building, Oklahoma City, Oklahoma, this 30th day of November, 1943.

Corporation Commission of the State of Oklahoma, Reford Bond, Chairman; Ray O. Weems, Vice-Chairman; Wm. J. Armstrong, Commissioner.

Attest: Carl B. Mitchell, Secretary. (Seal.)

[fol. 67] EXHIBIT 22

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

Cause CD No. 963

Order No. 17736

In the Matter of the Application of RAY STEPHENS, INCORPORATED, for Amendment of Rules and Regulations Governing the Medrano Gas Sand Production of the West Cement Gas Field

REPORT OF THE COMMISSION

This cause came on for hearing before the Corporation Commission of the State of Oklahoma in its court room in the Capitol Office Building, Oklahoma City, Oklahoma, on the 10th day of April, 1945, at 10 o'clock, A. M., upon application filed by Ray Stephens, Incorporated, and pursuant to order of the Commission setting the same for hearing and notice published as required by law; at which hearing, Chairman Reford Bond and Commissioners Ray O. Weems and Wm. J. Armstrong sitting, Duke Duvall appeared for applicant, W. R. Wallace appeared for Magnolia Petroleum Company, and R. H. Gwinner appeared for Sunray Oil Company, evidence was presented, and the Commission, being fully advised in the premises, announced the granting of the following order, finding as follows:

Findings

1. That notice by publication of the filing of the application herein, the time and place of the hearing thereon, and the purpose of said hearing, has been regularly given in all respects as required by law, and the Commission has jurisdiction of the subject matter embraced in said applica- [fol. 68] tion and of the parties interested therein, and jurisdiction to issue and promulgate the hereinafter prescribed order.

2. That on the 4th day of January, 1943, the Commission promulgated its Order No. 16170 in Cause CD No. 822, which prescribed rules and regulations governing production from the Medrano Gas Sand of the West Cement Field, and on the 13th day of April, 1943, the Commission amended said order by its Order No. 16342 issued in Cause CD No. 837, and thereafter and on the 1st day of October, 1943, issued its Order No. 16682 in Cause CD No. 865 amending said orders, and since said date has issued its allocation orders based thereon.

3. That since the promulgation of said Order No. 16682, it appears from the drilling of additional wells in said field and from geological, engineering, and other scientific information that the boundaries of the acreage which is productive of gas only, as defined by said Order No. 16682, should be changed, and that said productive gas acreage should be as defined by Exhibit "a" attached hereto and made a part hereof.

4. That from the evidence introduced in this cause it appears that the Medrano Sand of the West Cement Gas Field and the Medrano Sand of the West Cement Oil Field (heretofore designated in Order No. 16388 as the Southwest Cement Oil Field) are both in fact one common source of supply, and that all wells located within the area shown on Exhibit "A" are wells producing gas only from said Medrano Sand, and that all other wells producing from said [fol. 69] Medrano Sand are producing oil; that said field should hereafter be known as the West Cement Medrano Pool.

5. That since there are wells in said common source of supply which produce gas only and other wells which produce oil, in order to protect the oil reserves, prevent waste, and insure the greatest ultimate recovery of oil, it is neces-

sary to restrict the gas production from those wells producing gas only as hereinafter set out in this order.

6. That in order to fix the allocation to wells producing gas only based upon the amount of production during the month immediately preceding, it is necessary that reports thereon be filed by the takers and purchasers with the Corporation Commission on or before the 5th day of the succeeding month, and as soon thereafter as possible the Conservation Department should issue its allocation schedules for the month based upon the actual production for the preceding month.

7. That all operators in said field agree that this order is necessary and proper and should be issued by the Commission.

ORDER

It Is Therefore Ordered by the Corporation Commission of the State of Oklahoma as follows:

1. The productive area of the gas producing portion of the West Cement Medrano Pool is hereby defined as shown on Exhibit "A" attached hereto, and made a part of this order.

[fol.70] 2. This order shall become effective as of May 1, 1945, and when well allowables are calculated, the acreage attributable to a well as shown on Exhibit "A" attached hereto shall be used in the allocation formula.

3. Takers and purchasers of gas from these wells producing gas only in said pool shall file reports with the Conservation Department of the amount of gas produced from each well during any month on or before the 5th day of the succeeding month, and as soon as possible thereafter the Conservation Department shall issue reports showing the allocation to each well for the current month, using the production of the immediately preceding month to calculate the overage and underage.

Done and Performed by the Corporation Commission at its offices in the Capitol Office Building, Oklahoma City, Oklahoma, this 10th day of April, 1945.

Corporation Commission of the State of Oklahoma.
Reford Bond, Chairman; Ray O. Weems, Vice-Chairman; Wm. J. Armstrong, Commissioner.

Attest: Tom McMurray, Secretary. (Seal).

[fol. 71] EXHIBIT 23

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

Cause CD No. 865

Order No. 18017

In the Matter of the Application of WALKER T. POUND, Conservation Officer, for Amendment of the Rules and Regulations Governing the Medrano Sand of the West Cement Field

Report of the Commission

This cause came on for hearing before the Corporation Commission of the State of Oklahoma in its court room in the Capitol Office Building, Oklahoma City, Oklahoma, on the 24th day of July, 1945, at 10 o'clock, A. M., upon application filed by the Conservation Officer and pursuant to order of the Commission setting the cause for hearing and notice published as required by law; at which hearing the Conservation Officer and Conservation Attorney were present, and E. G. De Barade appeared for Phillips Petroleum Company; whereupon the cause was continued for hearing on the 26th day of July, 1945, at 10 o'clock, A. M., evidence was presented, and the Commission, being fully advised in the premises, announced the granting of the following order, finding as follows:

Findings

1. That notice by publication of the filing of the application herein, the time and place of the hearing thereon, and the purpose of said hearing has been regularly given in all respects as required by law, and the Commission has jurisdiction of the subject matter embraced in said application and of the parties interested therein, and jurisdiction to issue the hereinafter prescribed order.

2. That under date of October 13, 1943, the Commission issued its Order No. 16683 in this cause, promulgating rules and regulations governing production of oil and gas from the West Cement Medrano Pool.

3. That subsequent development has shown that Section 20 of said order relating to gas-oil ratio should be amended

to provide (1) a gas allowable for high gas-oil ratio wells produced in a pipeline; (3) time of making gas-oil ratio tests; (3) application of the pressure factor to high gas-oil ratio wells produced in a pipeline.

4. That in the interest of conservation and for the purpose of securing the greatest ultimate recovery of oil and gas from said pool, said Section 20 of Order No. 16683 should be amended to read as set out in the hereinafter prescribed order.

Order

It is therefore ordered by the Corporation Commission of the State of Oklahoma as follows:

(1) That Section 20 of Order No. 16683 issued by the Commission on the 13th day of October, 1943, being the general rules and regulations governing the West Cement Medrano Pool, be, and the same is hereby, amended to read as follows:

[fol. 72] "20. *Gas-Oil Ratio*—There is hereby established for the production of oil in said pool a gas-oil ratio of not to exceed 2,000 cubic feet of gas to 1 barrel of oil produced; provided, however, if the gas is delivered into a pipeline and used for ordinary purposes, the gas-oil ratio shall not exceed 3,000 cubic feet of gas to 1 barrel of oil. The gas-oil ratio shall be determined by the Conservation Officer by not to exceed an actual 24-hour gauge taken in the manner in which an operator will normally produce his allowable through a meter of standard and accepted installation, the volume corrected as is now customary for gas potentials in the pool; and during the same period the amount of oil produced shall be measured in tanks.

"All high gas-oil ratio wells which are being produced into a gas pipeline and the gas used for ordinary purposes shall be given a gas allowable production of 3,000 times the daily oil allowable established by the Commission for said pool, and such oil allowable as can be produced with such daily gas allowable.

"The allowable production of each well with a high gas-oil ratio which is not being produced into a pipeline and the gas used for ordinary purposes shall be multi-

plied by the gas-oil ratio herein fixed, and divided by the actual gas-oil ratio of each well to determine the number of barrels of oil to be produced from each well. 'Allowable production' as used herein shall mean the amount of oil which the Commission allocates to any well, or its full production if the well is incapable of making such allowable.

"All oil producing wells in the pool, with the exception of high ratio wells producing into a pipeline, shall be tested for gas-oil producing ratio once each six months' period or at more frequent time as the Conservation Officer may deem necessary.

"The monthly shut-in pressure tests prescribed by Section 7 of Order No. 16683 shall be taken on all high ratio wells producing into a pipeline at the same time and in the same manner that such tests are taken on the gas wells in said pool; and the pressure factor prescribed by said Section 7 shall be applied to reduce the gas allowable on such wells if and when their respective shut-in pressures fall below the weighted average of the gas wells in the pool, including such high ratio wells."

(2) This order shall be effective as of the 1st day of August, 1945, at 7 o'clock, A. M.

Done and performed by the Corporation Commission at its offices in the Capitol Office Building, Oklahoma City, Oklahoma, this 26th day of July, 1945.

Corporation Commission of the State of Oklahoma.

——— ———, Chairman; Ray O. Weems, Vice-Chairman; Wm. J. Armstrong, Commissioner. (Seal.)

Attest: Tom McMurray, Secretary.

[fol. 73] EXHIBIT 38

(Recd. Aug. 10, 1945)

Letter Head

August 8, 1945.

In re: West Cement Medrano Pool—Consideration of Unit Operation.

The Operators of the West Cement Medrano Pool.

GENTLEMEN:

Under date of June 29, 1945 a letter was addressed to the Operators in the West Cement Medrano Pool setting forth a proposal to unitize the Medrano Pool. A meeting of the operators was held in Oklahoma City and a meeting was held in Tulsa in which the letter was informally discussed. It was the concensus of the operators that Phillips Petroleum Company should address this letter and ask the operators: (1) to reply in writing and state whether or not the proposal to unitize was of sufficient interest to warrant a meeting to consider the preliminary proposal further, and, (2) to forward a tabulation of the distribution of working interest in their respective leases so that a complete list of working interest owners might be available for use at the proposed next meeting.

The Gulf Oil Corporation has already replied to the effect that they regard the Medrano Pool unitization of sufficient interest to warrant taking such steps as are necessary to develop the matter further and have forwarded a distribu-[fol. 74] tion of their working interest. In order that we may have the reaction of the entire group, we would be pleased to receive at your very earliest convenience a further statement from you with respect to the questions in this letter. If interest is sufficient, and we believe it will be, a meeting of the operators will be called at an early date in Oklahoma City.

Very truly yours, C. P. Dimit (ss).

C. P. Dimit:bc

[fol. 75] Operators of the West Cement Medrano Pool

Amerada Petroleum Corporation, P. O. Box 2040, Tulsa 2, Oklahoma, Attention of Mr. Earl B. Porter.

Anderson-Prichard Oil Corporation, APCO Tower, Oklahoma City 2, Oklahoma, Attention of Mr. W. T. Payne.

Gulf Oil Corporation, P. O. Box 661, Tulsa 2, Oklahoma, Attention of Mr. Rush Greenslade, Vice-Pres.

Magnolia Petroleum Company, P. O. Box 900, Dallas, Texas, Attention of Mr. D. A. Little, President.

Palmer Oil Corporation, Union National Bank, Wichita, Kansas, Attention of Mr. Tom Palmer, President.

Phillips Petroleum Company, Phillips Building, Bartlesville, Oklahoma, Attention of Mr. C. P. Dimit, Vice-Pres.

[fol. 76] Ramsey Petroleum Corporation, APCO Tower, Oklahoma City, Oklahoma, Attention of Mr. W. R. Ramsey, President.

Ray Stephens, Inc., 1714 First National Bank Building, Oklahoma City, Oklahoma, Attention of Mr. Ray Stephens, President.

Sunray Oil Corporation, Philtower Building, Tulsa, Oklahoma, Attention of Mr. Harry Nack.

[fol. 77] EXHIBIT 42

Letter Head

Dated: December 20, 1946.

Mr. Floyd Green,
Attorney for Corporation Commission,
State Capitol Building,
Oklahoma City, Oklahoma.

In re: Unitization of the Medrano Sand, West Cement hearing December 23, 1946.

DEAR SIR:

You are advised, that I am, as Trustee for the Estate of Charles B. Cooke, one of the royalty owners in the above area, do hereby hardily agree that the proposed plan be

carried through, as I am inclined to think there will be more recoverage of oil by virtue of such plan.

Yours very truly, E. A. Fariss, Apco Tower, Oklahoma City, Okla.

EAF:TT

[fol. 78] EXHIBIT 43

Letter Head

Dated: December 16, 1946.

Attention Judge Bond

Oklahoma Corporation Commission,
Oklahoma City, Oklahoma.

GENTLEMEN:

I have been studying very carefully, and watching very closely, the Unitization program in the Caddo County Cement area and I would like to go on record that it seems to be an ideal program and is going to be of great benefit to both producers and to individual royalty owners. Also, I will be happy to help in this program in any manner possible. My holdings, together with my associates consist of the following:

West Pell Tract	—44 acres	R. I.
" " "	—22 "	O.R.R.I.
East Pell Tract	—44 "	R. I.
Wilhite Tract	—90 "	R. I.
" "	—1/16 of 7/8	O.R.R.I.
Farwell Tract	—1/16 of 7/8	O.R.R.I.
Loose Tract	—25 acres	R. I.
Sames Tract	—20 acres	R. I.
Medrano Tract	—15 acres	R. I.

[fol. 79] Hoping that your program will be successfully completed in the very near future, I am

Very truly yours, M. B. Ettlinger (ss).

P. S. I am writing this letter at the suggestion of my at-

torney, Mr. Clifton H. Davis, who has been kind enough to forward to me a copy of your plans.

Address: M. B. Ettlinger, 50 Broad Street, New York.

[fol. 80] EXHIBIT 44

Chickasha, Oklahoma, 18 December 1946.

Corporation Commission,
State Capitol Building,
Oklahoma City, Oklahoma.

HONORABLE CORPORATION COMMISSIONERS:

As a royalty owner in the West Cement Pool of Caddo County, Oklahoma, I am of the opinion that the proposed unitization and pressure maintenance plan for the Medrano Sand of this pool, will benefit the majority of those interested in this area.

Very truly yours, Frank Worrell (ss).

FW:fy

[fol. 81] EXHIBIT 45

Received Conservation Department Dec. 18, 1946. Oklahoma Corporation Commission.

Dated: December 17, 1946.

The Corporation Commission,
State Capitol,
Oklahoma City, 5, Oklahoma.

Gentlemen:

I understand that Phillips Petroleum Company and others, have made application for the unitization of the Medrano Sand Zone in the West Cement field, Caddo County, Oklahoma, in which I am a royalty owner.

I wish to put myself on record as being in favor of the unit as outlined, in that I believe it will be beneficial to the interests of all.

Yours very truly, (S.) J. A. Henan.

JAH:cl

[fol. 82] EXHIBIT 46

Received Conservation Department Dec. 18, 1946. Oklahoma Corporation Commission.

Dated: Oklahoma City, Oklahoma, December 17th, 1946.

The Corporation Commission,
State Capitol,
Oklahoma City, Oklahoma.

Gentlemen:

With reference to the application filed by Phillips Petroleum Company for unitizing the Medrano Sand Zone in the West Cement field, Caddo County, Oklahoma, which is now pending before you, wish to advise that I am the owner of certain royalty interests located in the proposed unit area, and as such royalty owner I approve the plan for unitizing the Medrano Sand Zone in the area, and I am of the opinion that the final results from such unit operation will be beneficial to the royalty owners as well as the operators.

Very truly yours, Ardie Oil and Gas Company, by (S.) R. D. Jones, First National Bank Building, Oklahoma City 2, Oklahoma.

[fol. 83] EXHIBIT 47

Received Conservation Department Dec. 18, 1946. Oklahoma Corporation Commission.

Dated: Oklahoma City, Okla., December 17th, 1946.

The Corporation Commission,
State Capitol,
Oklahoma City, Oklahoma.

Gentlemen:

With reference to the application filed by Phillips Petroleum Company for unitizing the Medrano Sand Zone in the West Cement Field, Caddo County, Oklahoma, which is now pending before you, wish to advise that I am the owner

of certain royalty interests located in the proposed unit area, and as such royalty owner I approve the plan for unitizing the Medrano Sand Zone in the area, and I am of the Opinion that the final results from such unit operation will be beneficial to the royalty owners as well as the operators.

Yours very truly (S.) R. D. Jones, First National Bank Building, Oklahoma City 2, Oklahoma.

[fol. 84] EXHIBIT 48

Letter Head

Dated: December 12, 1946.

Mr. Reford Bond, Chairman
Corporation Commission
State Office Building
Oklahoma City, Oklahoma.

Dear Sir:

As a royalty owner in the Magnolia-L. L. Edwards, Magnolia-Ida Edwards, Anderson-Prichard, Walker A, and Anderson-Prichard, Pickard leases in the Medrano sand section of the West Cement field, I am very interested in seeing the unitization of this sand. Hope the commission will allow the companies to unitize this sand.

Yours very truly, (S.) Clark H. Boyles.

[fol. 85] EXHIBIT 49

Received Conservation Department Dec. 13, 1946. Oklahoma Corporation Commission.

Dated: Oklahoma City, Oklahoma. December 12, 1946.

The Corporation Commission,
State Capitol,
Oklahoma City 5, Okla.

Gentlemen:

With reference to the application filed by Phillips Petroleum Company for unitizing the Medrano Sand Zone in the

West Cement field, Caddo County, Oklahoma, which is now pending before you, wish to advise that I am the owner of certain royalty interests located in the proposed unit area, and as such royalty owner I approve the plan for unitizing the Medrano Sand Zone in the area, and I am of the opinion that the final results from such unit operation will be beneficial to the royalty owners as well as the operators.

Very truly yours, (S.) R. M. Franks, 505 N.W. 18th St., Oklahoma City 3, Okla.

[fol. 86] EXHIBIT 50

Received Conservation Department, Dec. 12, 1946, Oklahoma Corporation Commission.

Norman, Oklahoma, Dec. 11, 1946.

Corporation Commission,
State Capital,
Oklahoma City, Okla.

Gentlemen:

I am a small royalty owner in the Medrano Sand area of the West Dome at Cement, and wish to inform you that the unitization plan being presented meets with my entire approval.

Very truly yours, (S.) H. C. Hill, 800 S. Miller, Norman, Okla.

[fol. 87] EXHIBIT 51

Letter Head

Dated: Nov. 5, 1946.

Oklahoma State Corporation Commission,
Oklahoma State Capitol,
Oklahoma City, Okla.

Gentlemen:

It is my understanding a hearing will be held on the unitization of the royalty under the Medrano sand produc-

tion in the Cement Pool, Caddo County, Oklahoma, on November 7, 1946. I regret it will be impossible for me to be in attendance at this hearing and I wish to express to the Commission my views regarding this matter as a royalty owner.

We experienced a similar situation as royalty owners in the Cotton Valley Pool, Louisiana, and after five years' experience, there can be no question but what the unitization of the pool was extremely beneficial to the royalty owners.

I own royalty under the Phillips-Garner lease and under the Anderson-Prichard-Pickard lease, both of which will be in the proposed Medrano sand unit, and I would like to go on record as a royalty owner favoring the forming of this unit.

Study of it leads me to believe it will be beneficial to the royalty owners, to the operators and to the State and that the ultimate recovery will be greater under the unitization plan outlined than it would be by individual operation.

Very respectfully yours, (S.) Roy M. Smith.

RMS:HB

[fol. 88] EXHIBIT 59

Received Conservation Dept. Jan. 2, 1946. Oklahoma Corporation Commission.

Letter Head

Dated: December 30, 1946.

Corporation Commission,
State of Oklahoma,
Oklahoma City, Oklahoma.

Re: West Cement-Medrano Sand Communitization

Gentlemen:

I am the owner of a small mineral interest in the Medrano sand pool of West Cement, and therefore interested in the pending proposal to communitize this reservoir. I am a petroleum geologist, having been actively engaged in oil

and gas work during the past 25 years. My education for this work was acquired at our University of Oklahoma.

I am in favor of the principle of communitization of oil and gas reservoirs from the standpoint of conservation of reserves and the greater ultimate production that will accompany such projects. Equitable allocation of the reserves to the various owners seems, to me, to be the only real problem to such a plan. It is my conviction that any reasonably fair plan will work for the economic benefit of all concerned, because such a program appears almost certain to materially increase the ultimate production from the reservoir.

The various interests can be estimated as to their ratios with the whole, with a reasonably small amount of error. [fol. 89] This will not work out in exactly the same proportion of benefit to each separate owner, but the benefit should be of such magnitude that every interest, what ever its proportion of the whole, will be materially benefited.

I have had nothing to do with the formulation of the pending proposal to communitize this reservoir. I have made some investigation of this plan though, and have investigated the allocation to the property in which I own an interest and the allocations to the tracts adjoining my interest. They appear quite reasonable to me. I am impressed by the thoroughness of the geological investigations that have been made, and by the obvious effort and intention to equitably allocate the interests to the various owners. It is my belief that every individual owner will benefit materially by this plan, and also that the State and Nation will be enriched by the greater ultimate production that will eventuate.

My only interests in this proposal are that of a small royalty owner who stands to gain or lose by it, and my interest in seeing that our natural resources are conserved for the most benefit of all.

Respectfully yours, (S). Noel Evans.

[fol. 90] EXHIBIT 60

Received Conservation Department Dec. 31, 1946. Oklahoma Corporation Commission.

Oklahoma City, Oklahoma, December 30, 1946.

Corporation Commission
State of Oklahoma
State Capitol Building
Oklahoma City, Oklahoma.

Gentlemen:

I am a royalty owner under the proposed West Cement-Medrano unitization plan and I wish to go on record that I am in favor of this unitization of the pool.

Sincerely, (S.) Wm. H. Harding.

WHH:VG

[fol. 91] EXHIBIT 61

Letter Head

Dated: January 4, 1947

Corporation Commission
State of Oklahoma
State Capitol Building
Oklahoma City, Oklahoma

Gentlemen:

This company is a royalty owner in the West Cement Medrano Pool under four separate leases. As a royalty holder we wish to express our approval of the pooling plan proposed by various operators of leases in this pool. As a royalty holder we should like to see it put into effect as quickly as possible in order that conservation of oil may begin at once.

Yours very truly, Little Nick Oil Company, By Jessie Dearing (ss), Secretary.

JD:ms.

[fol. 92] EXHIBIT 62

Letter Head

402 Hales Building
December 21, 1946

Commissioners of
The Corporation Commission of
The State of Oklahoma
State Capitol
Oklahoma City, Okla.

Re: West Cement Field, Caddo County, Okla.

Gentlemen:

As an owner of mineral rights in and under several tracts of land in the West Cement Field of Caddo County, Oklahoma, this is to advise you that I am in favor of the Medrano Sand wells in this pool be communitized.

Respectfully submitted, (S.) A. A. Schreiber.

AAS/M.

[fol. 93] EXHIBIT 63

847 N. E. 20th Street
Oklahoma City 5, Oklahoma
December 23, 1946

Honorable Corporation Commission
Capitol
Oklahoma City 5, Okla.
Messrs. Bond, Weems and Armstrong

Re: The Unitization of the Medrano sand of the West Cement Pool, Caddo County, Oklahoma

Gentlemen:

I am the owner of mineral interests under the

S½ NW¼ of Section 35,
NE¼ of Section 34, and
S½ of NE¼ of Section 26, Township 6 north, Range 10 West, and

NW¼ NE¼ of Section 1 and
N½ SE¼ of Section 1, Township 5 north, Range 10 West.

Consequently I am interested in obtaining the most money that is possible from the reserves under these mineral interests and I am of the opinion that the unitization program covering the Medrano sand of the West field of the Cement Pool is the only program under which this may be accomplished.

Therefore, I respectfully request that the Corporation Commission issue the order for the unitization.

Yours respectfully, (S.) Mary E. Rookstool.

MER-McC.

[fol. 94] EXHIBIT 64

828 N. E. 15th Street
Oklahoma City 4, Oklahoma
December 23, 1946

Honorable Corporation Commission
State Capitol
Oklahoma City 5, Okla.

Messrs. Bond, Weems and Armstrong

Re: The Unitization of the Medrano sand of the West Cement Pool, Caddo County, Oklahoma.

Gentlemen:

I wish to take this opportunity to express my sentiments in regard to the unitization of this pool, which is now being presented before the Corporation Commission by the various leasehold interests. Because of some royalty owners' lack of familiarity with the geological and production problems in connection with the Medrano sand, and also because of the leadership of this organization by Mr. L. A. Davis of Chickasha, Oklahoma, these royalty owners have misunderstood the tremendous benefits which will come to them and to the State of Oklahoma. It is entirely possible that 60% to 70% more oil may be recovered from this horizon under

a unitized repressuring program than would be produced under the past and present conventional methods.

As I understand it, the Corporation Commission has the legal authority to order such unitized operation. It is my opinion that should the operators of the oil and gas pools fail to practice such repressuring methods and unitized programs . . . particularly when the laws of the State of [fol. 95] Oklahoma have provided for such a procedure, then and in that event it is entirely possible that eventually the government of the United States will probably take over such operations, managing them under the Bureau of Mines, in order to prevent the loss of approximately 60% of the oil and gas that might be otherwise recovered.

Therefore, as an owner of a considerable amount of royalty under the unitized acreage and as a geological engineer, I respectfully request that you issue the order covering such unitization.

Yours very truly, (S.) Farris L. Rookstool.

FLR-McM.

[fol. 96] EXHIBIT 68

Committee of Geologists Report on Compilation of Data Pertinent to the Medrano Sand, West Cement Field, Caddo County, Oklahoma

Operators

Amerada Petroleum Corporation, represented by J. Lawrence Muir.

Anderson Prichard Oil Corporation, represented by R. W. Brauchli & A. H. Richards.

Gulf Oil Corporation, represented by J. T. Richards.

Magnolia Petroleum Company, represented by W. L. Moreman & R. C. Gutschick.

Palmer Oil Corporation, not represented by their consent.

Phillips Petroleum Company, represented by R. G. Moss, A. J. Montgomery, I. Curtis Hicks.

Stephens Petroleum Company, represented by P. A. Wallace.

Sunray Oil Corporation, not represented by their consent.

[fol. 97] Introduction

This report written in October, 1945, is the result of the consideration by this committee of geological data pertaining to the unitization of production from the Medrano Sand in the West Cement Field, Caddo County, Oklahoma. Correlations and interpretations as shown are the result of the combined opinion of the committee from all the geological information available at the present.

Medrano Sand

Medrano Zone: The attempt to define the stratigraphic age of the Medrano is not a consideration of this committee. For practical purposes, the top of the Medrano Zone is considered as the top of the main body of conglomerate and/or sand from sample determination and electrical logs. The base of the Medrano is placed at the base of the sand as determined in the same manner. The zone is composed of sand, conglomerate and shale.

Medrano Sand: The Medrano sand is that portion of the Medrano zone composed of sand and conglomeratic sand. The productive sand is that portion having sufficient porosity and permeability to form a reservoir and proven to be productive.

Areal Extent: The north and northeast boundaries have been defined under the Corporation Commission Order No. 17736 as of April 10, 1945. Extension of this boundary was made to the southeast and to the northwest as shown on the maps presented with this report. Points where the sand is absent by faulting or pinch-out are shown as zero points or [fol. 98] connected by zero lines. The Pool is limited on the south and west by water.

Structural Influence on Reservoir

Faults: The presence of a number of faults in the West Cement Medrano Pool have been proven by geologic evidence. Only those of sufficient importance to influence production have been considered and these divide the pool into five segments as shown on the map:

The Sherritt Fault was cut by Gulf #3 Sherritt, 33-6N-10W.

The Sterba Fault was cut by Phillips #2 Oaks, 34-6N-10W, Palmer #5 and #6 Sterba and Magnolia #2 Cement Henley, in Section 35-6N-10W.

The Hartshorne Fault was cut by Phillips #1 Hartshorne in 2-5N-10W and Magnolia #11 Medrano and #10 Lindsey in 36-6N-10W.

The Edwards Fault was cut by Magnolia #6 Edwards, 1-5N-10W.

Five of the wells cited above missed the Medrano sand because of faults shortly above the zone.

Barriers: The Edwards fault is believed to form a complete barrier between the production east of the fault and that west of the fault. There is no definite geologic evidence to prove or disprove communication between the other segments but it is agreed that pressure measurements indicate the lack of free communication between segments.

[fol. 99] Four maps, included with the report, illustrate the findings of the committee. The maps are as follows:

Contours on top of Medrano sand;
Contours on base of Medrano sand;
Isopach map showing thickness of gas productive sand;
Isopach map showing thickness of oil productive sand.

The map contoured on top of the sand was constructed first and the other maps were constructed by super-imposing them over it. It will be noticed that thickness between the top of the sand and the base of the sand was not always the net thickness used because of omission of formations which are discussed elsewhere in this report.

Certain lines on the maps which may be defined as boundaries, barriers or faults are shown by long dashes. These dashed lines are ones which subsequent information may change or confirm. The solid lines are lines either established by Corporation Commission Order or established because it is believed additional data will only confirm them.

Gas-Oil Contact

The gas-oil contact was cored in Magnolia #5 Henley and Phillips #7 Fletcher. On the basis of information obtained during the drilling and completion of these wells, the con-

tact of the original gas-oil zone was agreed upon as a minus datum of 4000 for the portion of the structure west of the Edwards Fault. However, Phillips #7 Fletcher obtained [fol. 100] some evidence that the gas-oil contact was at a minus datum of 3970 at the time of completion. For that part of the structure east of the Edwards Fault, a minus datum of 4050 was agreed upon. Evidence for this was based on Anderson Prichard #1-A Prentice which was a distillate well at a minus datum of 4050 on the base of the sand.

Oil-Water Contact

This committee set up what was believed to be an original oil-water contact for that portion of the structure west of the Edwards Fault. This data was obtained in Amerada #2 Hartshorne, which found the contact between white water bearing sand and brown oil bearing sand by cores at a minus datum of 4741. This well produced both oil and water above this datum. The water from this well is believed to be water that has migrated into the oil column due to withdrawal of oil and gas up-dip.

Other wells, Amerada #1 Beemer, Gulf #4 Sherritt, and Amerada #1 Hartshorne just barely reached the water at its present position in the sand.

For that part of the structure east of the Edwards fault, the committee has agreed upon an arbitrary minus datum of 4450. This was established by taking the interval between the Anderson Prichard #1-A Walker, which had white water sand, and their #2-A Walker, which was an oil producer, and moving up one-third of the distance.

On the west edge of the structure, the I. T. I. O. #1 Dome-[fol. 101] Bo, a dry hole, although structurally high enough to produce oil, was tested and abandoned. The committee recognizes two possibilities to explain this situation: (1) There may be a barrier and a consequent change in the oil-water contact between this well and the rest of the field; and (2) The sand commonly considered to be Medrano in this well may not be Medrano sand.

Data Sheets

Data for constructing the maps submitted herewith were assembled in tabular form and the accompanying tables are

self-explanatory. The following erro-s should be noted and corresponding corrections made:

Section 26-6N-10W, Stephens #4 Melton—Top Gross Zone and Top Net Sand Sub-sea Elevations should be -2860 instead of -2870.

Section 28-6N-10W, Stephens #4 Wilhite—Top Gross Zone and Top Net Sand Sub-sea Elevations should be -4167 instead of -4168.

Section 33-6N-10W, Stephens #1 Polhman—Sub-sea Elevation Base Net Sand should be -4555 instead of -4565.

Section 1-5N-10W, Stephens #1-A Tom Walker—Sub-sea Elevation Base Net Sand should be -4244 instead of -4242. [fol. 102] Section 2-5N-10W, Amerada #1 Hartshorne—Sub-sea Elevation Base Net Sand should be -4671 instead of -4631.

Recommendations

Because numerous discrepancies have appeared in the location of wells in this Pool, it is recommended that a survey be made to determine the exact location of all wells producing from the Medrano Sand and that a map be constructed showing such locations together with the boundaries and areas of leases. Until such survey is made, minor discrepancies must be admitted.

Conclusions

The data compiled and interpretations made of the geology of the Medrano Sand as herewith presented, has been shared in by the entire committee. This, despite the fact that each company representative differs from the others in many of the decisions; However, with the idea of unitization in mind, each representative has readily conceded many of his own ideas for the sake of the whole, and has faced the assemblage and interpretation of this data with frankness, fairness, and sincerity.

[fol. 103] NOTE RE EXHIBIT 69

Whereupon, Exhibit 69, being an Exhibit which cannot be reproduced, parties perfecting appeal to State Supreme

Court will bring Exhibit 69 into Court for State Supreme Court to see and examine.

[fol. 104] EXHIBIT 71

Reservoir Study of the West Cement Medrano Pool

By an Engineering Sub-Committee

Aubrey C. Godbold, Chairman, Gulf Oil Corporation

C. H. Danchertsen, Amerada Petroleum Corporation

Gilbert Wood, Jr., Phillips Petroleum Company

May 27, 1946.

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[fol. 107] I. Introduction

This Reservoir study of the West Cement Medrano Pool has been made for the purpose of investigating the feasibility of initiating a pressure maintenance program by gas injection under unit operation.

The content of the report briefly describes the history and geology of the pool, summarizes the work done by the Sub-Committee in predicting future reservoir performance, summarizes the economics of primary and gas injection operations, tabulates the conclusions reached as a result of the study, and makes recommendations for future procedure.

In the appendix of the report a more detailed discussion of methods used to obtain the results is given. Also presented in the appendix is a tabulation of each lease participation and each operator's interest in accordance with the plan originally formulated by a meeting of the operators on October 18, 1945.

II. Conclusions

1. Ultimate oil and gas recovery by primary operation will require approximately 28 more years and is calculated to return a future net revenue to operators of about $20,749,000. Operators' future net profit is calculated to be $14,644,000 after deducting operating and investment costs. (These figures are based on the assumption that the same relative pore volume is voided in the gas cap as in the oil zone, thereby resulting in similar pressure declines in each zone. This is not true at the present time because current gas pore volume voidage is at a rate of 4.9 times that of the relative oil zone voidage. A continuance of present gas production rates will reduce pressures in the reservoir prematurely, thus reducing primary oil recovery, which in turn will result in a lower net revenue than indicated above.)

[fol. 108] 2. Ultimate oil recovery from a unitized gas injection program is calculated to yield a future net revenue to operators of $31,789,000. This will require a gas injection period of approximately 21 years and an additional 7 years production thereafter. This figure is considered to be a minimum expectancy. Undoubtedly, gravity segregation will contribute additional oil recovery both for primary and gas injection operations; however, the effect will be larger under a pressure maintenance program. Such a program will permit the pool to be produced with greater efficiency by selective control of oil wells and reduced operating expenses. Operators' future net profit after deducting operating and investment costs is calculated to be $25,914,000.

3. The total investment required for gas injection is estimated to be approximately $1,160,000. This consists of an initial investment of $330,000 for plant, dehydrator, gathering lines, and injection lines; investment for additional plant facilities, amounting to $90,000 in each the fifth, twelfth, and fifteenth years, totaling $270,000; and invest-

ment of $560,000 for drilling additional wells starting the first year and continuing at a rate of one per year until 7 are completed.

4. Under a unitization program, initial investment for gas injection facilities and additional drilling will pay out in the third year after commencement of unit operation. At the end of the fifth year, additional net profit over primary recovery to the unit will be about $1,191,000 with $340,000 future investment in plant and drilling costs yet to be made. At depletion of the pool, 28 years hence, net profit over primary recovery to the unit is calculated to be $11,270,000.

[fol. 109] III. Recommendations

The Engineering Sub-Committee unanimously recommends that the West Cement Medrano Pool be unitized at the earliest possible date and that the following program be initiated:

1. Discontinue production from the gas cap.
2. Install proper facilities and return produced gas to the gas cap.
3. Drill additional wells for more efficient operation and the maintenance of higher recovery rates, as necessary.

IV. Discussion

A. History of Pool

The West Cement Medrano Pool was discovered with the completion of Magnolia Petroleum Company's Medrano No. 6 gas well in the SE NE SW of Section 36-6N-10W in October, 1936. Development of the gas cap proceeded, but it was not until March, 1943, after some 30 billion cubic feet of gas had been produced, that oil was discovered by Stephen Petroleum Company's Pierson No. 1 in the SE SW SE of Section 35-6N-10W. To date there have been 35 commercial oil wells and 20 commercial gas wells completed in the Medrano sand. Gross production as of March 1, 1946, amounted to 5,621,000 barrels of oil and 60,168 MMcf of gas from the gas cap. This production amounts to about 5.8% of the original stock tank oil in place and 54% of the original gas in the gas cap. It has been estimated that 4,681 MMcf of solution gas has also been produced. Spacing is on

an irregular 40-acre pattern for the oil zone and an irregular 160-acre pattern for the gas zone.

Allowable oil production was 300 barrels per well per day until March, 1946 at which time it was lowered to 175 bar-
[fol. 110] rels per well per day. In both cases a maximum of 2,000 cubic feet per barrel gas-oil ratio was allowed without penalty unless gas was marketed, in which case 3,000 cubic feet per barrel was allowed. Gas allowable for the field since October, 1943 has been maintained at 23,626 Mcf per day.

B. Geology

The only producing horizon in the West Cement Pool that was considered in this study is the Medrano sand of the Pennsylvanian series. Although this sand contains some thin shale laminations, it is considered to be fairly homogeneous. Porosity throughout the productive pay section is very uniform, and permeability which averages about 300 MD is reasonably uniform even though it varies considerably in some instances.

A real extent of the pool is 1,300 acres for the oil zone and 1,980 acres for the gas zone. The oil zone averages approximately 2000′ in width and 6 miles in length running southeast and northwest. The gas cap extends the length of the oil zone with its widest part approximately in the center of the field where it extends to a width of about one mile. Boundaries to the north and east are established by a discontinuance of productive sand and to the south and southwest by edgewater.

The sand body dips rather uniformly to the southwest, and has a closure of approximately 1800′ of which 750′ is in the oil zone. Average depth is 3500′ subsea for the gas zone and 4375′ subsea for the oil zone. Average thickness of the gas zone is 66′ and average thickness of the oil zone is 95′.

Transverse faults divide the pool into five segments herein designated as Segments A, B, C, D, and E, lettered from west to east. The oil-water contact has been placed at 4741′ subsea in all segments but Segment E where it is at 4465′ subsea. Gas-oil contact has been placed at 4000′ sub-
[fol. 111] sea in all segments except but Segment E where it is at 4050′ subsea.

Two structural maps contoured on the top and base of the Medrano sand, and two isopachous maps contoured on the productive pay interval in the oil and gas zones were prepared by a Sub-Committee of geologists and copies were distributed to the operators.

C. Work of the Sub-Committee

1. Isopachous Maps

The isopachous maps of the oil and gas zones, as prepared by the Geological Sub-Committee, were used to determine the total sand volume in each zone for each lease. An aerial map was used to verify correctness of well locations.

2. Isobaric Map

Pressures at the top of the sand were contoured on an isobaric map of the pool, and weighted average pressures in both oil and gas zones were determined for each lease. The pressures used were those from the general pressure survey of November 1945.

3. Core Data

All available core data were carefully analyzed, and a weighted average porosity was determined for each segment. The value of porosity so determined for each segment is tabulated in Table IX.

4. Reservoir Fluids

The characteristics of the reservoir oil as determined from bottom hole sample analyses of oil from Gulf-Sherritt No. 1 and Stephens-Pierson No. 1 are shown in Figures Nos. 11 and 12. These data include the gas solubility, shrinkage, and reservoir oil viscosity. The relative gas density was calculated from gas analysis data on Phillips-Oaks No. 1 and is shown in Figure No. 14. Gas viscosity was obtained from "Viscosity of Natural Gases" by Bicher [fol. 112] and Katz. Thirteen analyses of gasoline content in the casinghead gas by physical test are tabulated in Table XIII.

5. Pressure Data

In addition to the isobaric map constructed as of November 1945, other pressure data *was* collected and studied to

determine the original reservoir pressure, and the reservoir pressures at the time of oil discovery in each segment. These data are shown in Table IX.

6. Production Data

Production data for both oil and gas wells were obtained from the operators in the pool.

7. Oil Originally in Place at Time of Oil Discovery

Using the basic information as cited above, the stock tank oil in place at the time of oil discovery in each segment was calculated, the details of which are shown in Table IX.

8. Reservoir Performance Calculations

Calculations of future reservoir performance in regard to gas-oil ratios, pressure declines, and oil recoveries were made for each segment. Predictions were made for (1) primary operation, (2) gas cap shut in, and (3) gas injection into the reservoir. The results of the calculations are shown in Figures 1, 2, 3, 4, and 5. Future oil and gas production rates, future reservoir pressures, and future gas injection rates were estimated for gas injection operation and are illustrated in Figures 6, 7, 8, 9, and 10, and Tables II, III, IV, V, VI, and VII. Present relative oil zone and gas zone pore volume voidage rates were calculated and the results are shown in Table VIII.

9. Reservoir Economics

Future net revenue and future net profit, after lifting and [fol. 113] investment costs, were determined for both primary and gas injection programs. The results of this analysis are shown in Tables I and I-A.

D. Discussion of Results

Table I is a recapitulation of reservoir performance and economics. It sums up the possibilities of gas injection under a unit program as compared to the very best possibilities of primary recovery. Future recovery for primary operation as shown in the table can only be realized if gas production from the gas cap is sufficiently curtailed to permit the same relative pore volume voidage from both the gas cap and the oil zone. The recovery figures shown on

the table for gas injection are considered conservative. The additional net profit gained by unitization, as shown in the table, is therefore considered a minimum expectancy. To obtain this additional profit by unitization it will be necessary to control reservoir performance in four ways:

1. Discontinue gas cap production.
2. Return produced gas to the formation at the most efficient rate.
3. Drill 7 additional wells at suitable locations.
4. Reduce average pool gas-oil ratios by selective control of oil wells.

This can only be done to best advantage by a unit program since selective production, gas injection, and an arbitrary consideration of property lines for the purpose is necessary.

Table VIII compares relative pore volume voidage of the gas zone and oil zone. Obviously, primary production of oil from the reservoir will suffer to great extent unless this inequity of a gas voidage 4.9 times that of oil zone voidage is corrected.

[fol. 114] Table IX shows such information as the acre feet of sand, porosity, original reservoir pressure at gas-oil contact, pressure at gas-oil contact at the time of oil discovery, volume of evolved gas at time of oil discovery, percent connate water, oil saturation at time of oil discovery and stock tank oil in place at time of oil discovery for each segment. The method used in calculating each item is also shown on the table.

[fol. 115] Bibliography

M. Muskat, "The Production Histories of Oil Producing Gas-Drive Reservoirs," Journal of Applied Physics, Vol. 16, No. 3, March 1945.

M. C. Leverett and W. B. Lewis, "Steady Flow of Gas-Oil-Water Mixtures Through Unconsolidated Sands," Petroleum Development and Technology, Vol. 142, 1941.

L. B. Bicher and D. L. Katz, "Viscosity of Natural Gases," Trans. A. I. M. E., Vol. 155, 1945.

Bureau of Mines, Report on West Cement Gas Field, Oklahoma, No. 1, 1-A, April 1943, 2-A, June 1943.

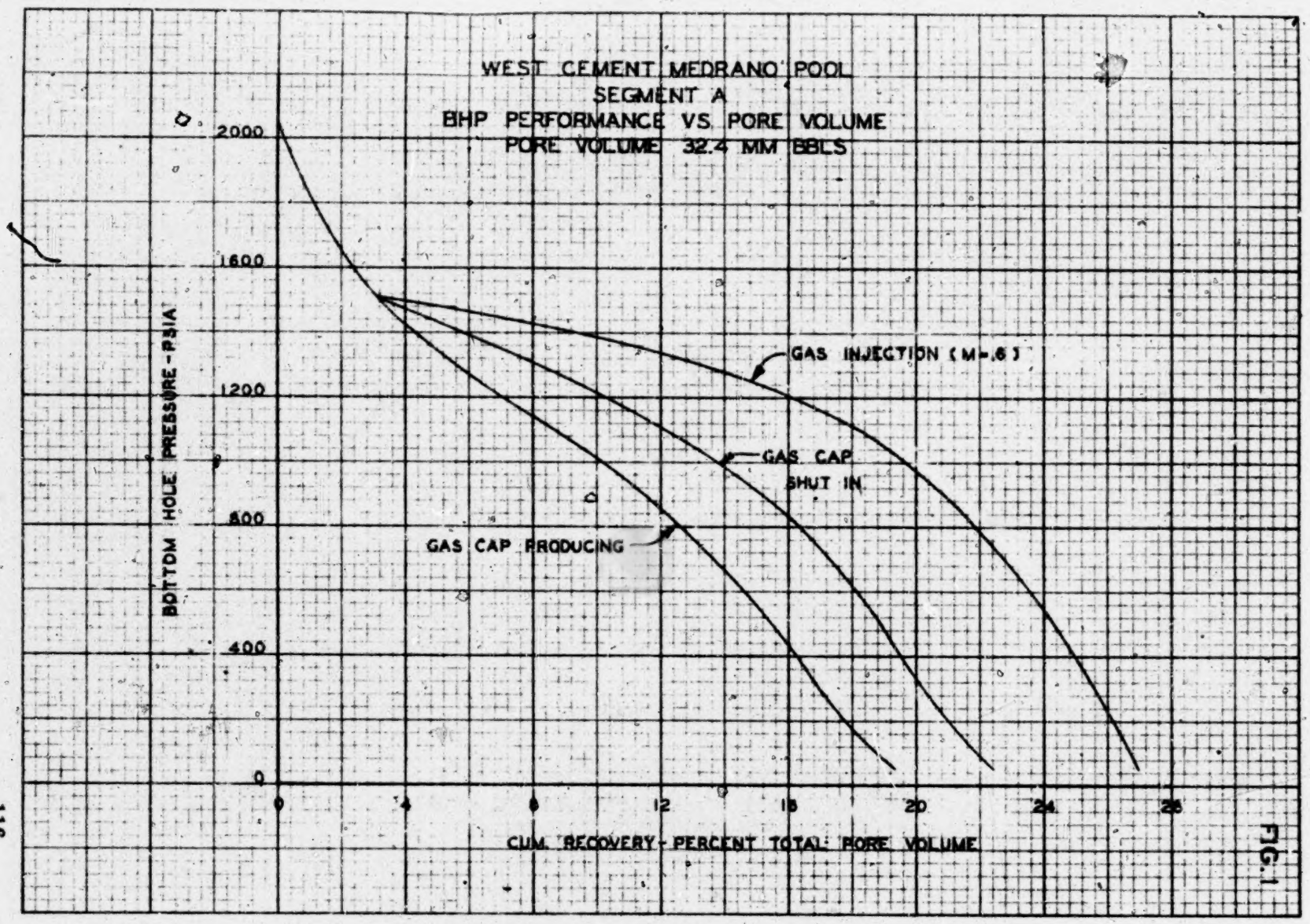

WEST CEMENT MEDRANO POOL
SEGMENT A
BHP PERFORMANCE VS. PORE VOLUME
PORE VOLUME 32.4 MM BBLS
BOTTOM HOLE PRESSURE - PSIA
2000
1600
1200
800
400
0
GAS INJECTION (M=.6)
GAS CAP SHUT IN
GAS CAP PRODUCING
0
4
8
12
16
20
24
28
CUM. RECOVERY - PERCENT TOTAL PORE VOLUME

FIG. 1

1427

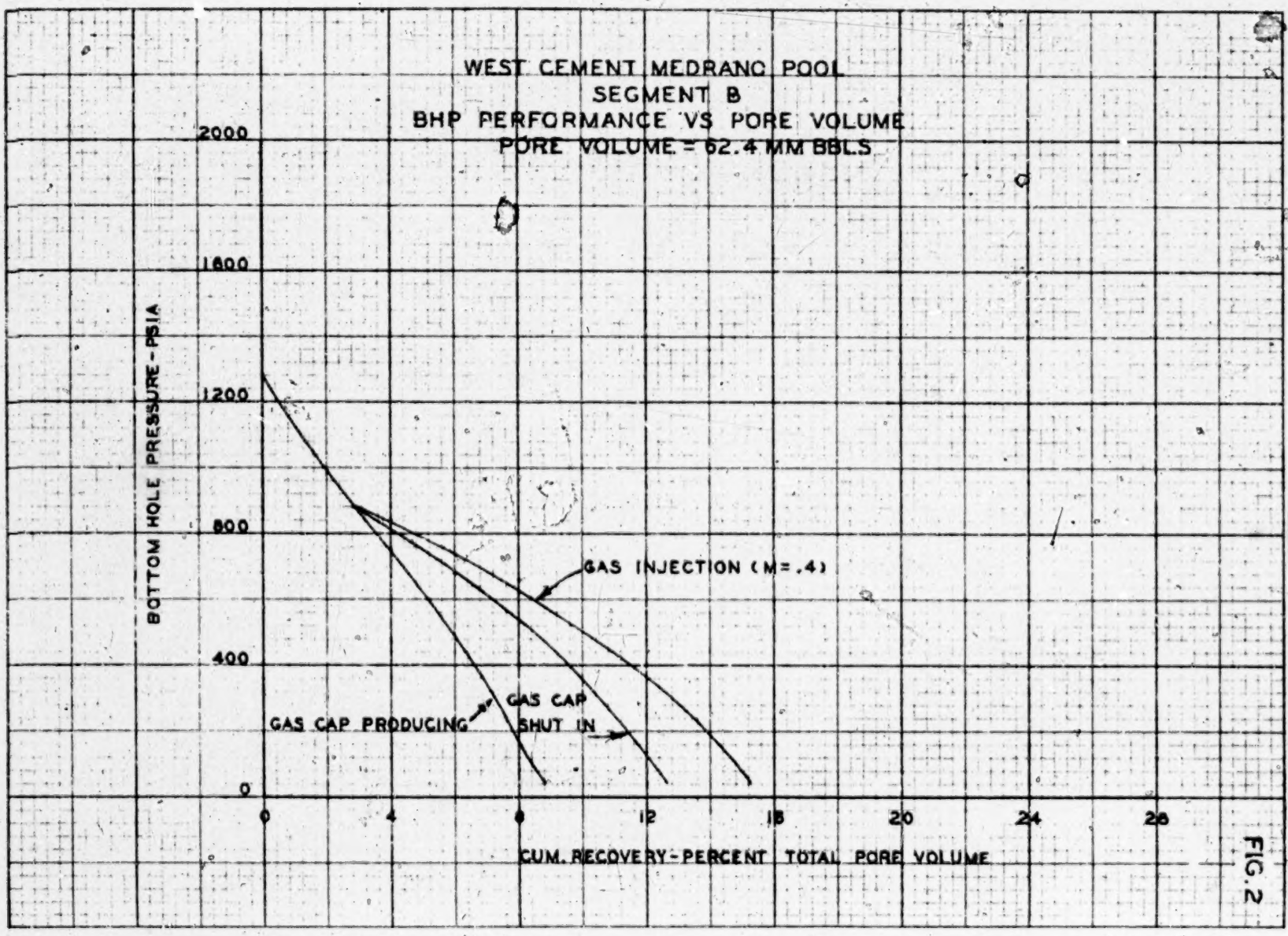

WEST CEMENT MEDRANO POOL
SEGMENT B
BHP PERFORMANCE VS PORE VOLUME
PORE VOLUME = 62.4 MM BBLS
BOTTOM HOLE PRESSURE - PSIA
2000
1600
1200
800
400
0
GAS INJECTION (M=.4)
GAS CAP PRODUCING
GAS CAP SHUT IN
0
4
8
12
16
20
24
28
CUM. RECOVERY - PERCENT TOTAL PORE VOLUME

FIG. 2

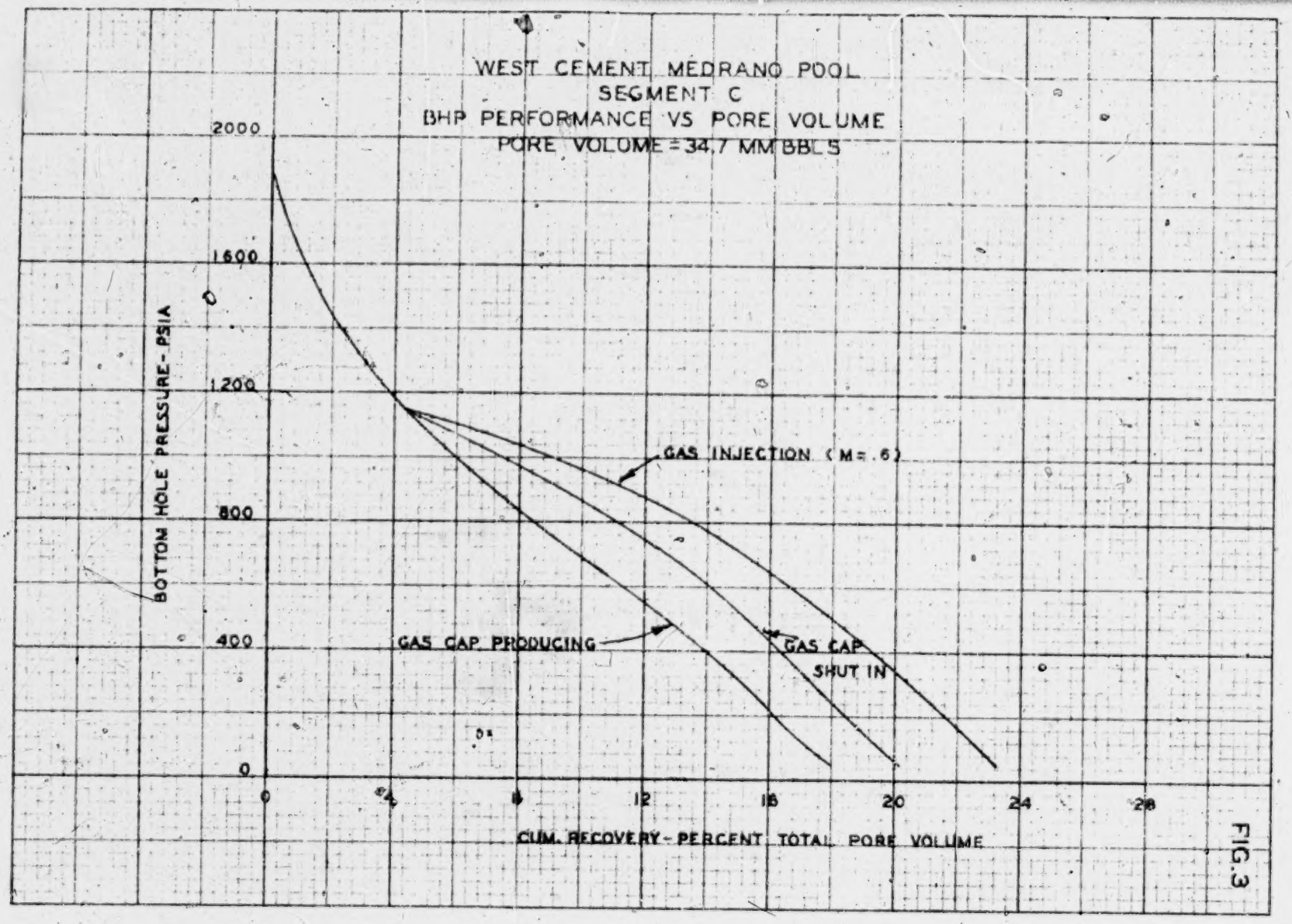

WEST CEMENT MEDRANO POOL
SEGMENT C
BHP PERFORMANCE VS PORE VOLUME
PORE VOLUME = 34.7 MM BBLS
BOTTOM HOLE PRESSURE - PSIA
2000
1600
1200
800
400
0
GAS INJECTION (M = .6)
GAS CAP PRODUCING
GAS CAP SHUT IN
0
4
8
12
16
20
24
28
CUM. RECOVERY - PERCENT TOTAL PORE VOLUME

FIG. 3

1429

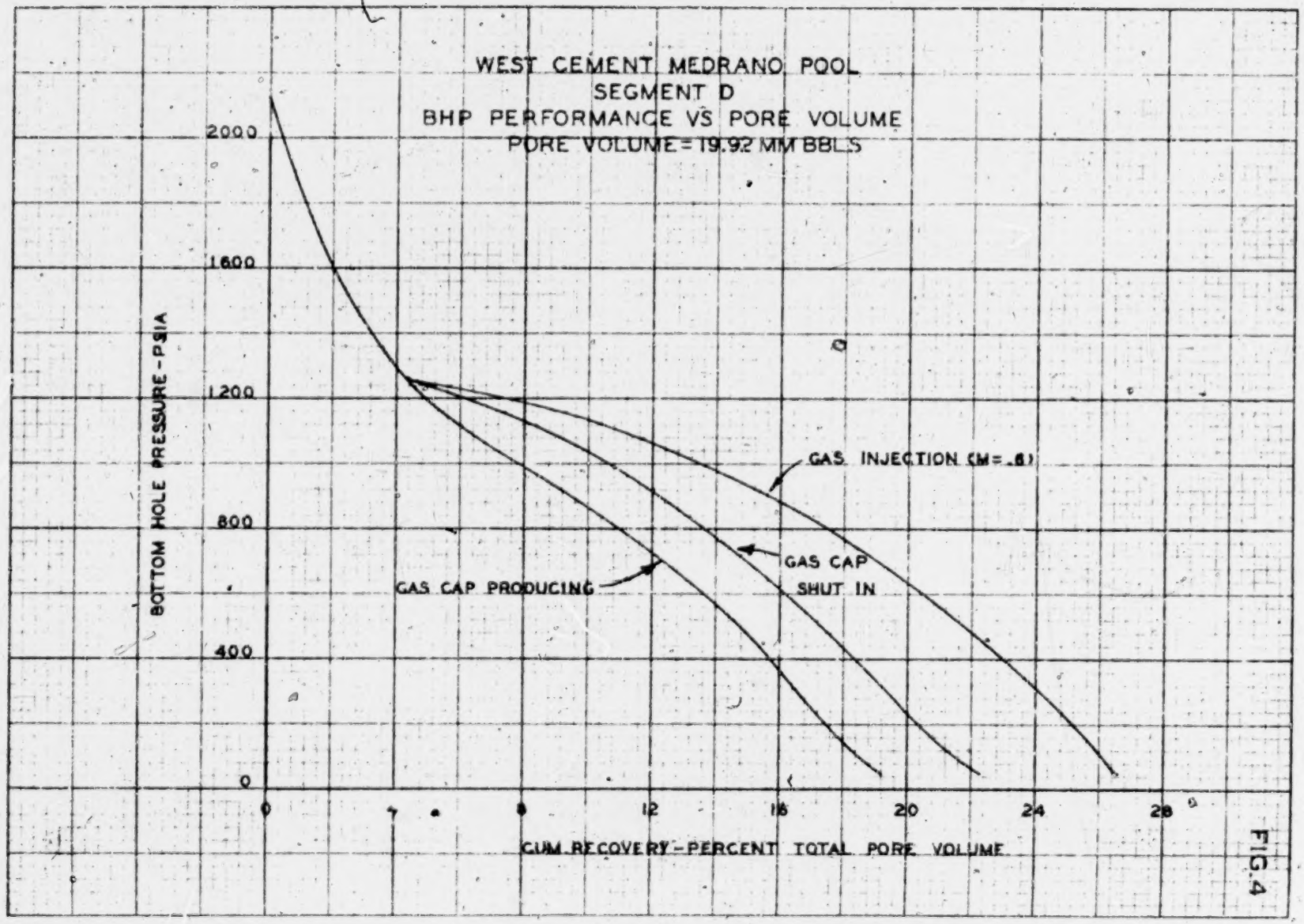

WEST CEMENT MEDRANO POOL
SEGMENT D
BHP PERFORMANCE VS PORE VOLUME
PORE VOLUME = 19.92 MM BBLS
BOTTOM HOLE PRESSURE - PSIA
2000
1600
1200
800
400
0
GAS INJECTION (M = .6)
GAS CAP SHUT IN
GAS CAP PRODUCING
0
4
8
12
16
20
24
28
CUM RECOVERY - PERCENT TOTAL PORE VOLUME

FIG. 4

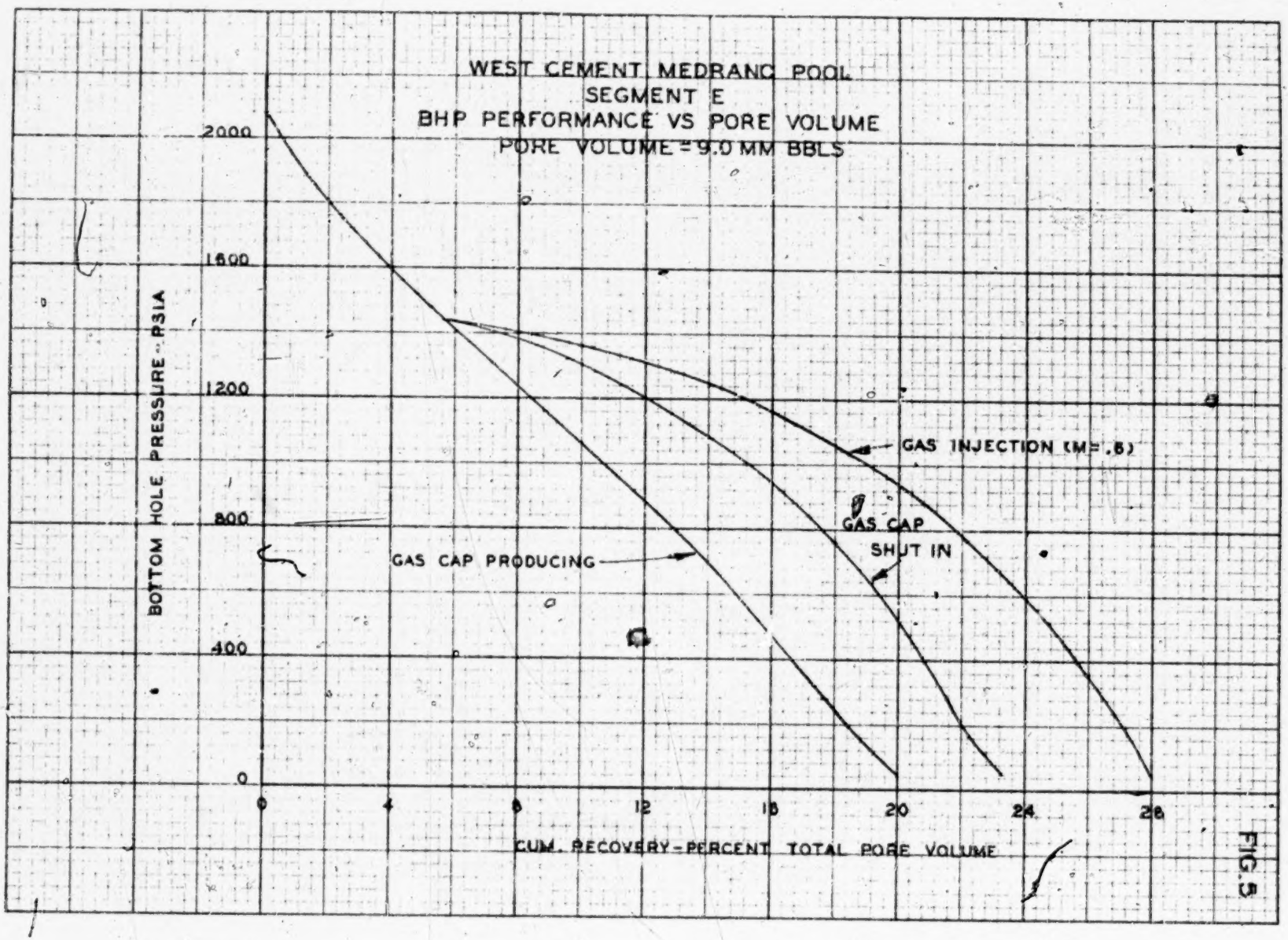

WEST CEMENT MEDRANO POOL
SEGMENT E
BHP PERFORMANCE VS PORE VOLUME
PORE VOLUME = 9.0 MM BBLS
BOTTOM HOLE PRESSURE - R31A
2000
1600
1200
800
400
0
0
4
8
12
16
20
24
28
CUM. RECOVERY - PERCENT TOTAL PORE VOLUME
GAS INJECTION (M=.8)
GAS CAP SHUT IN
GAS CAP PRODUCING

FIG. 5

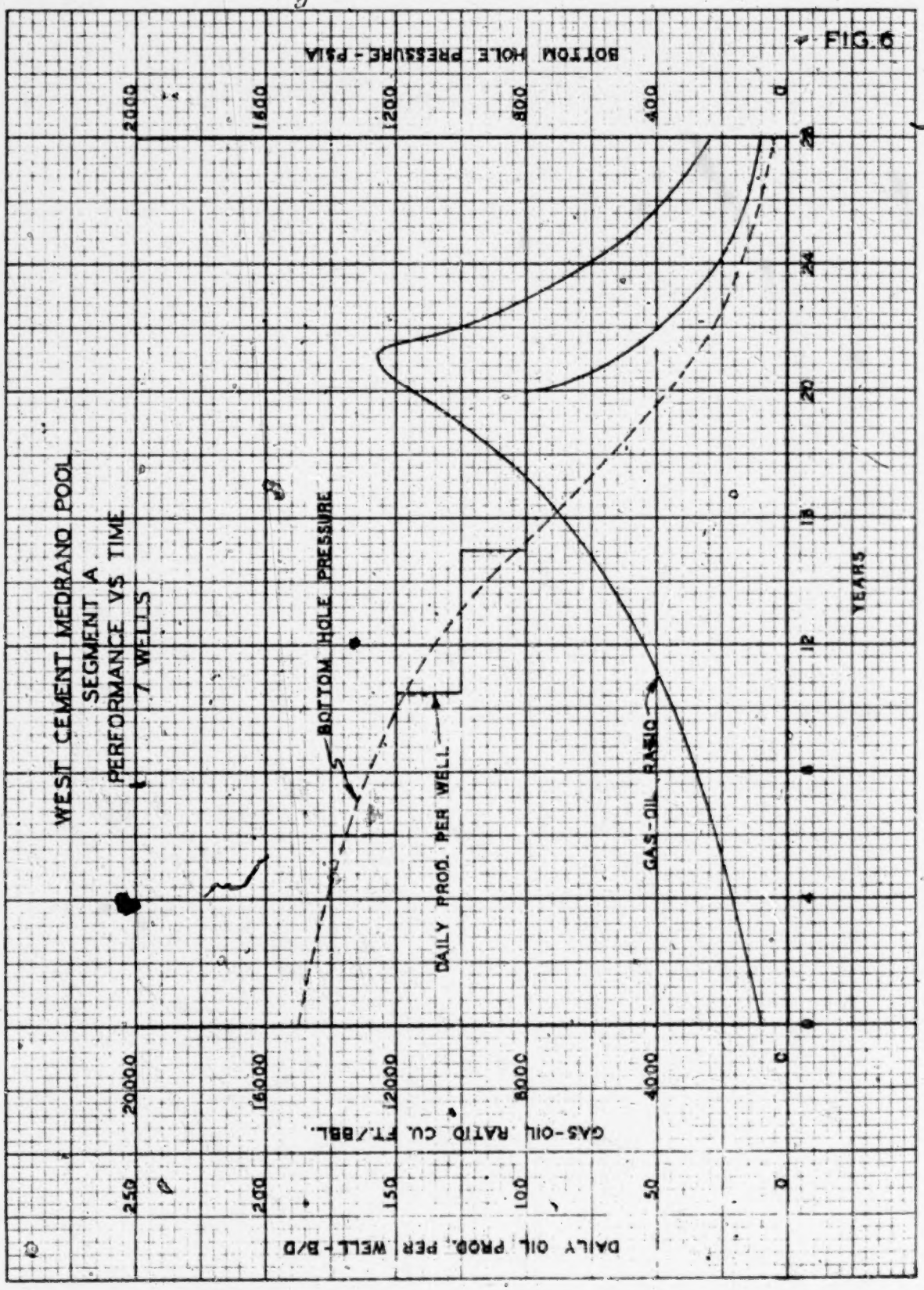
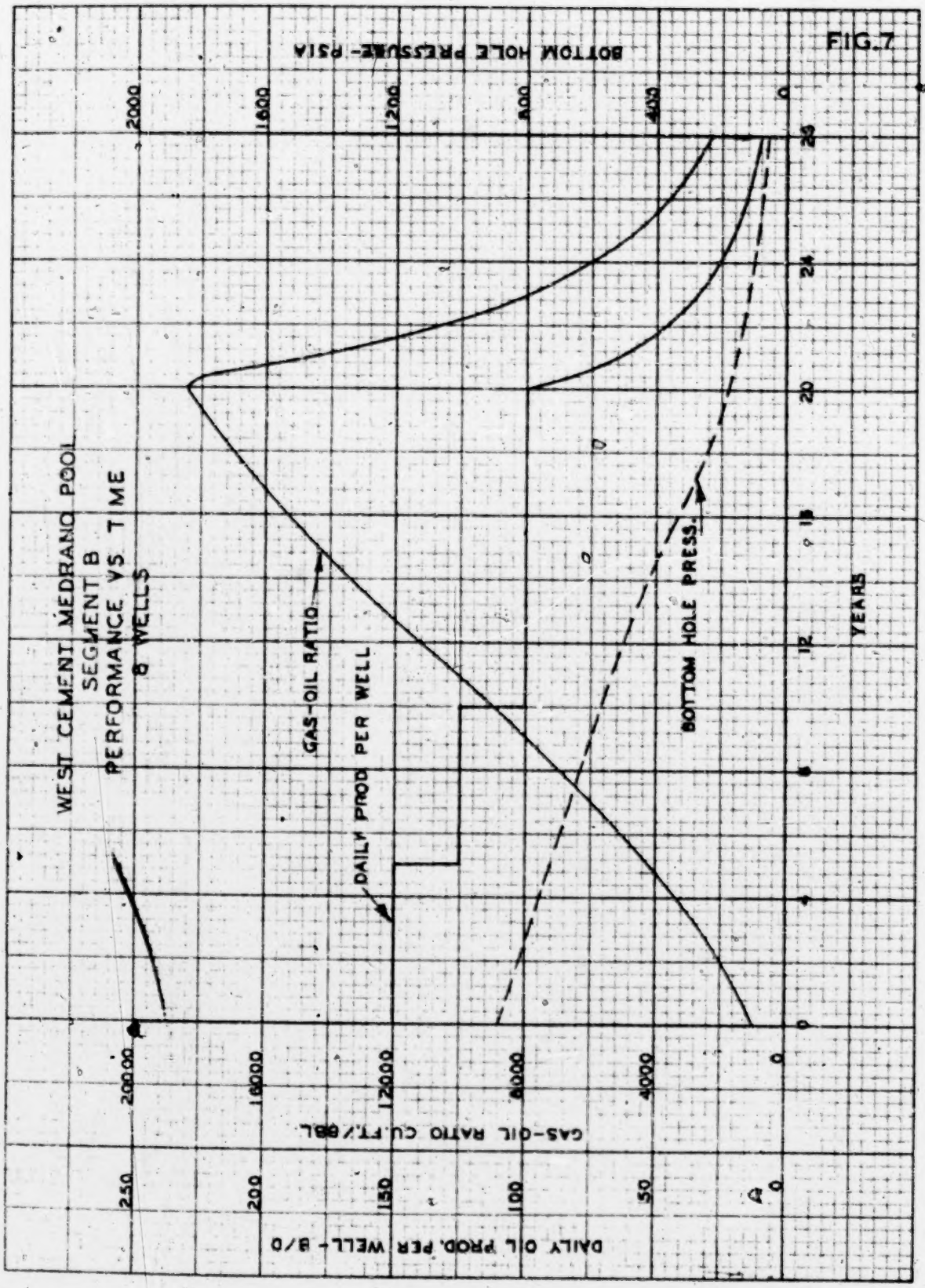

WEST CEMENT MEDRANO POOL
SEGMENT A
PERFORMANCE VS TIME
7 WELLS
BOTTOM HOLE PRESSURE
DAILY PROD. PER WELL
GAS-OIL RATIO
YEARS
BOTTOM HOLE PRESSURE - PSIA
GAS-OIL RATIO CU. FT./BBL.
DAILY OIL PROD. PER WELL - B/D
2000
1600
1200
800
400
0
20000
16000
12000
8000
4000
0
250
200
150
100
50
0
A
B
C
D
4
8
12
16
20
24
28

FIG. 6

FIG. 7


WEST CEMENT MEDRANO POOL
SEGMENT B
PERFORMANCE VS TIME
8 WELLS
DAILY OIL PROD. PER WELL - B/D
GAS-OIL RATIO CU. FT./BBL
BOTTOM HOLE PRESSURE - PSIA
GAS-OIL RATIO
DAILY PROD PER WELL
BOTTOM HOLE PRESS.
YEARS
250
200
150
100
50
0
20000
16000
12000
8000
4000
0
2000
1600
1200
800
400
0
0
6
12
18
20
24
28

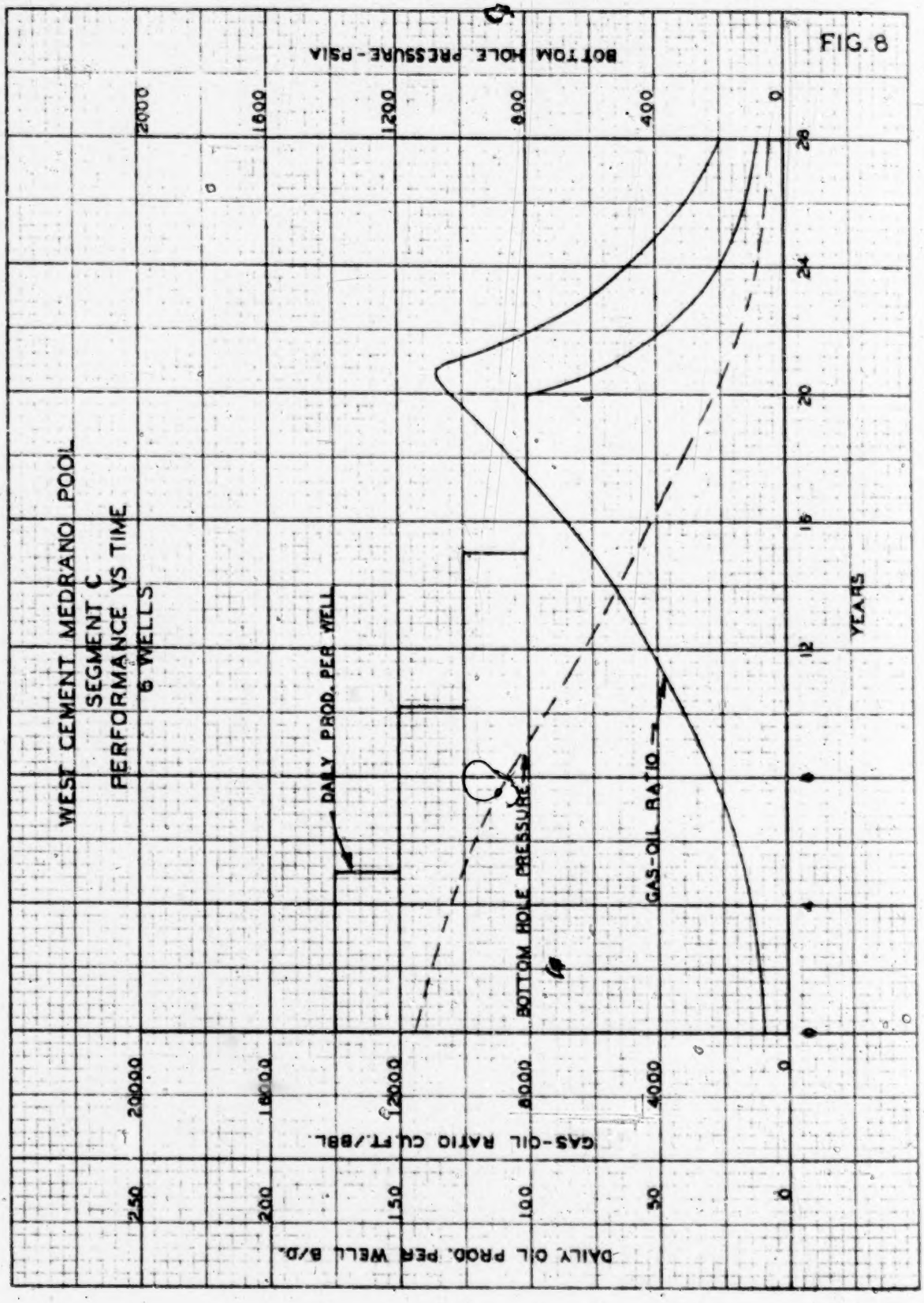

WEST CEMENT MEDRANO POOL
SEGMENT C
PERFORMANCE VS TIME
6 WELLS
DAILY OIL PROD. PER WELL B/D.
GAS-OIL RATIO CU.FT./BBL.
BOTTOM HOLE PRESSURE - PSIA
YEARS
DAILY PROD. PER WELL
BOTTOM HOLE PRESSURE
GAS-OIL RATIO
250
200
150
100
50
0
20000
16000
12000
8000
4000
0
2000
1600
1200
800
400
0
4
8
12
16
20
24
28

FIG. 8

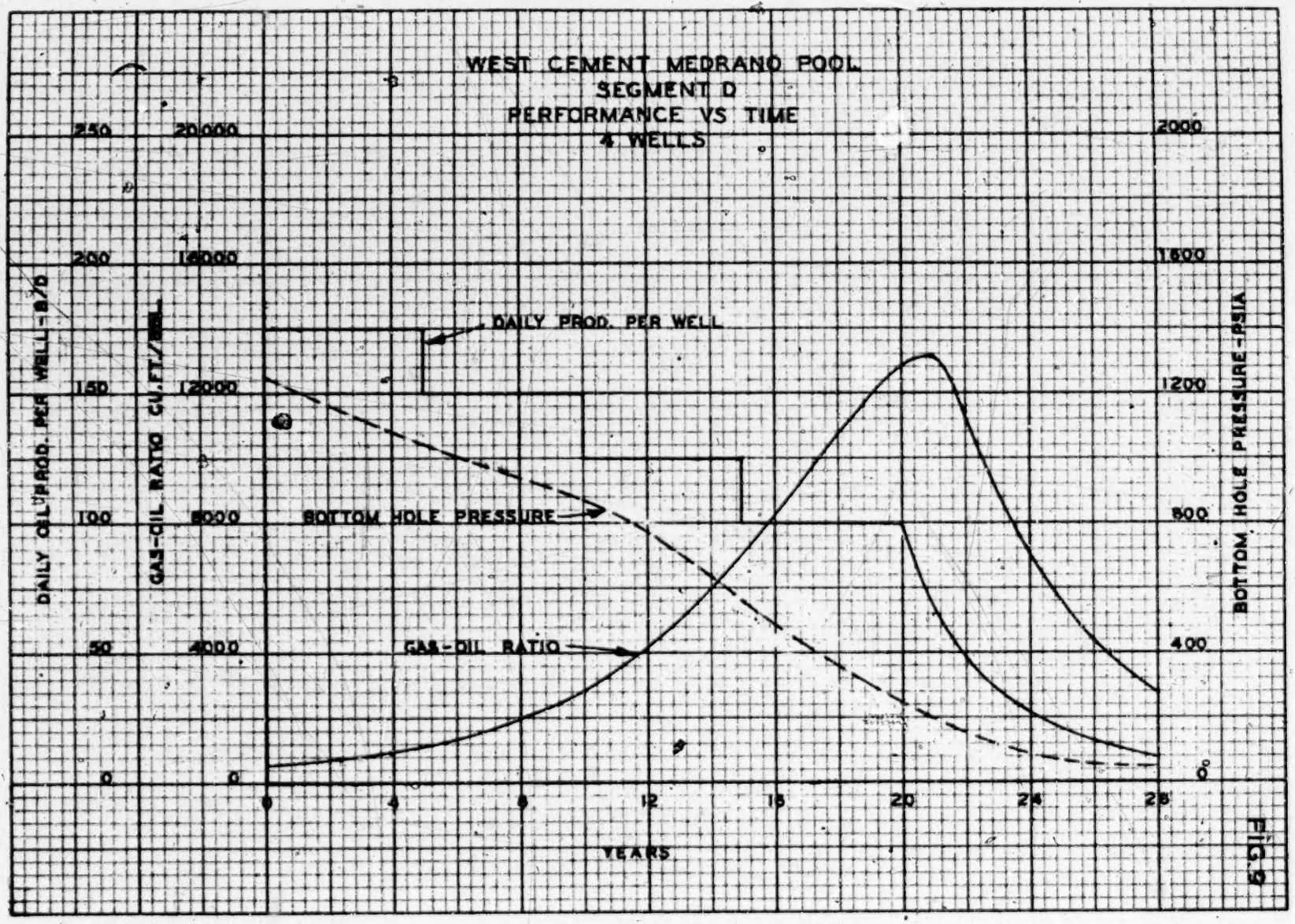

WEST CEMENT MEDRANO POOL
SEGMENT D
PERFORMANCE VS TIME
4 WELLS
DAILY OIL PROD. PER WELL-B/D
GAS-OIL RATIO CU.FT./BBL.
BOTTOM HOLE PRESSURE-PSIA
DAILY PROD. PER WELL
BOTTOM HOLE PRESSURE
GAS-OIL RATIO
250
200
150
100
50
0
20,000
16000
12000
8000
4000
0
2000
1600
1200
800
400
0
0
4
8
12
16
20
24
28
YEARS

FIG. 9

1435

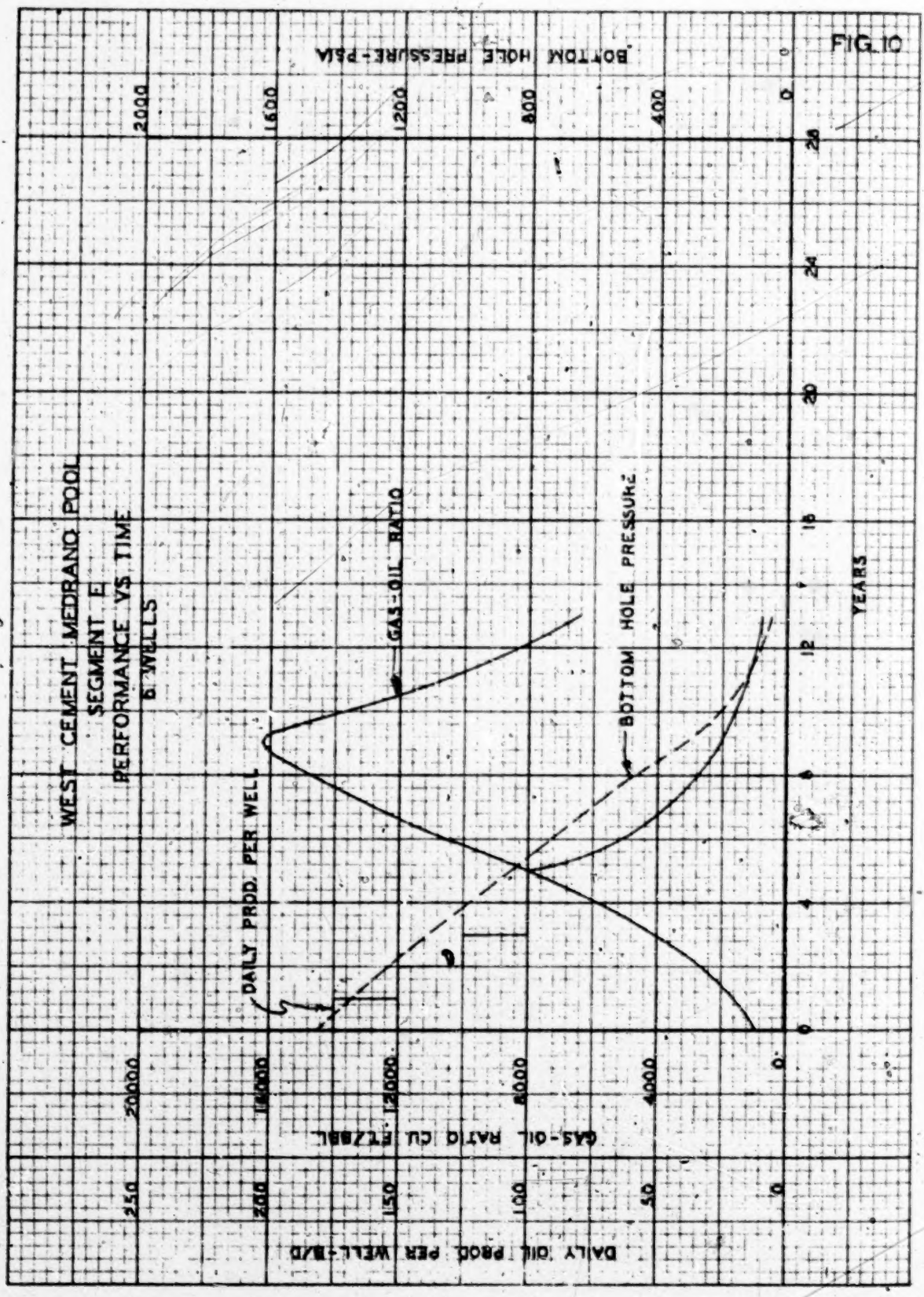
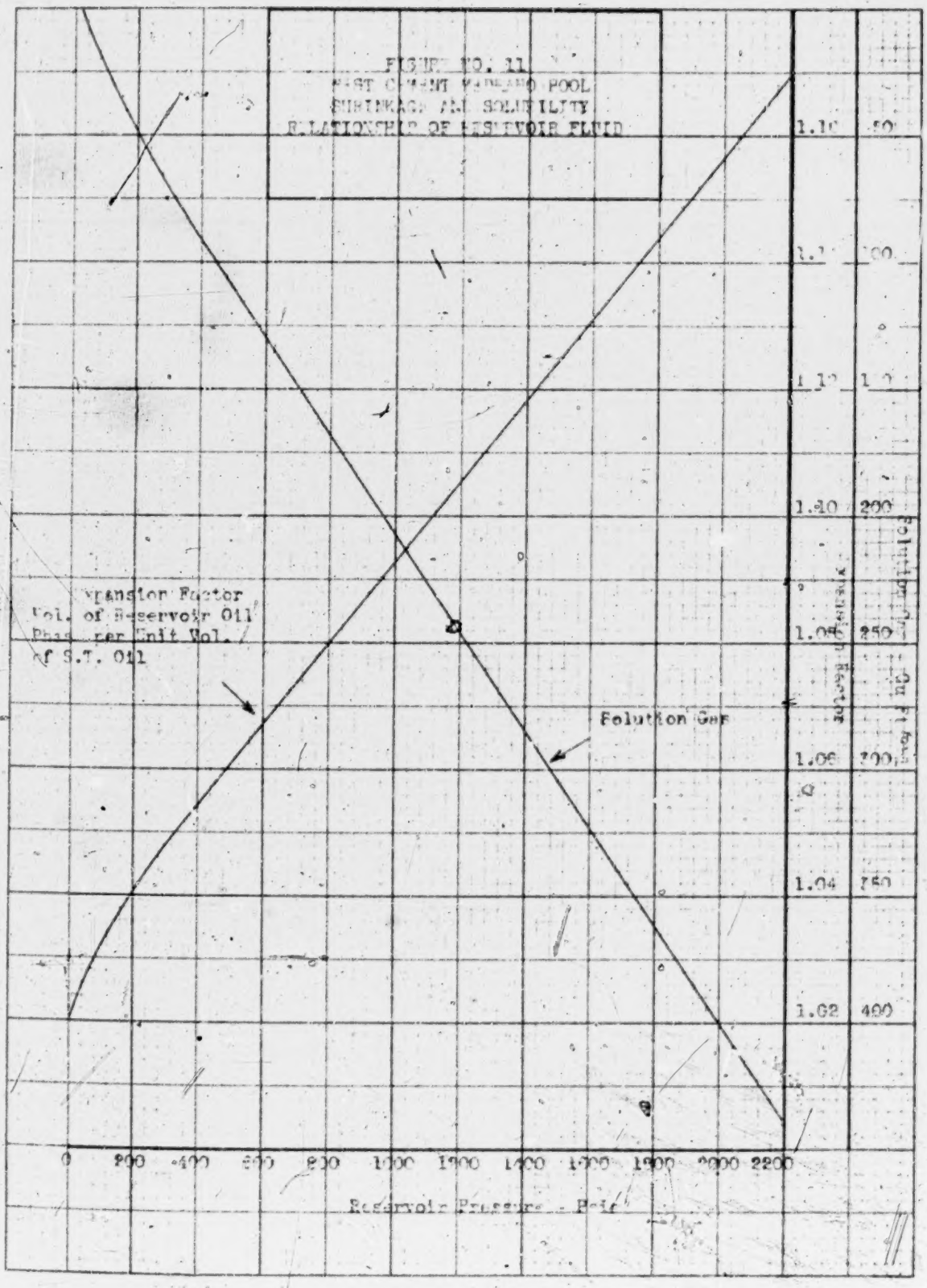
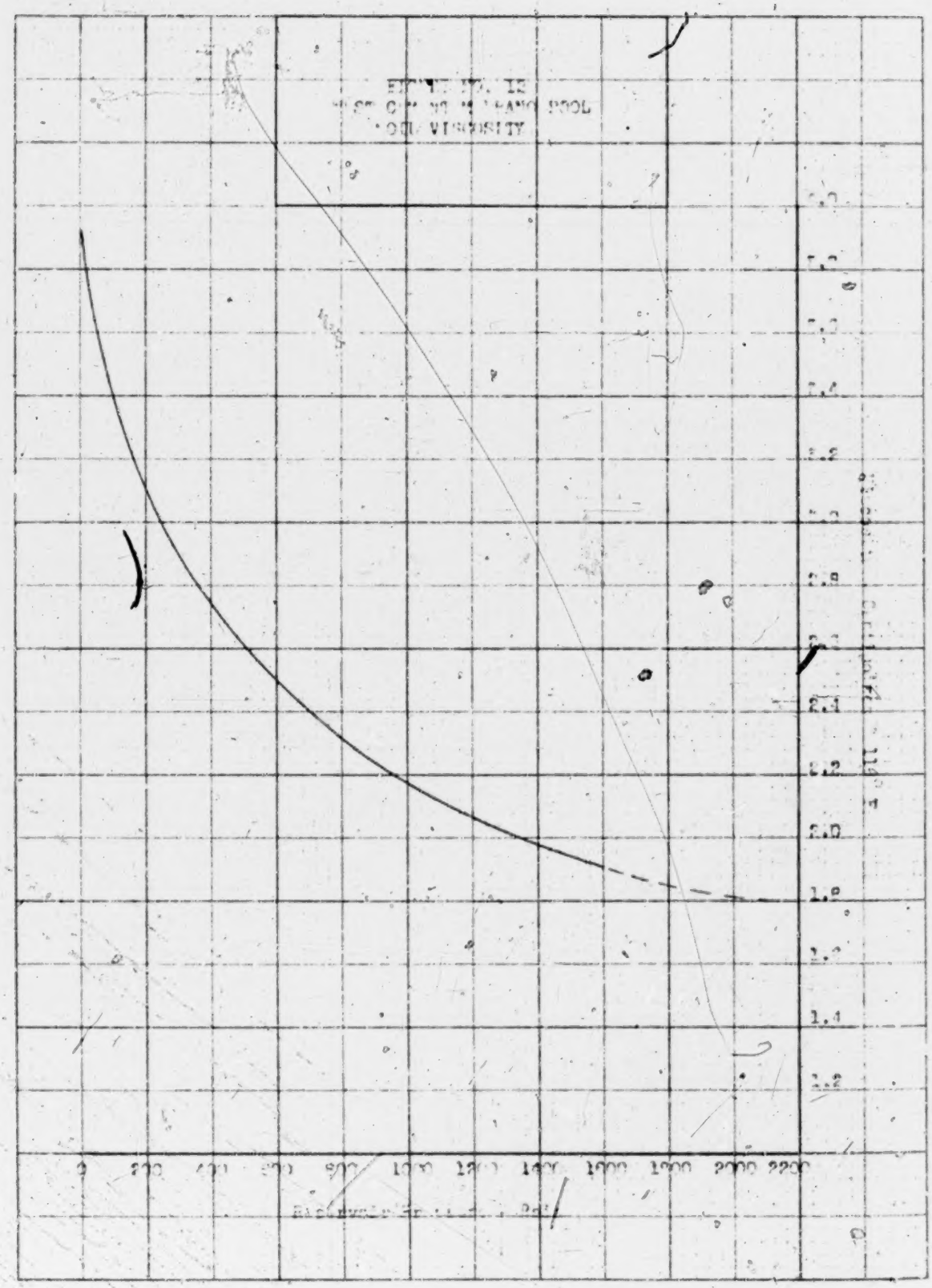

WEST CEMENT MEDRANO POOL
SEGMENT E
PERFORMANCE VS TIME
6 WELLS
DAILY PROD. PER WELL
GAS-OIL RATIO
BOTTOM HOLE PRESSURE
YEARS
DAILY OIL PROD. PER WELL-B/D
GAS-OIL RATIO CU FT/BBL
BOTTOM HOLE PRESSURE-PSIA

FIG. 10


FIGURE NO. 11
EAST CHANEY FAIRLAND POOL
SHRINKAGE AND SOLUBILITY
RELATIONSHIP OF RESERVOIR FLUID
Expansion Factor
Vol. of Reservoir Oil
Phase per Unit Vol.
of S.T. Oil
Solution Gas
Reservoir Pressure - Psig
0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200
1.10
1.08
1.06
1.04
1.02
50
100
150
200
250
300
350
400
Solution Gas - Cu. Ft. per Bbl.



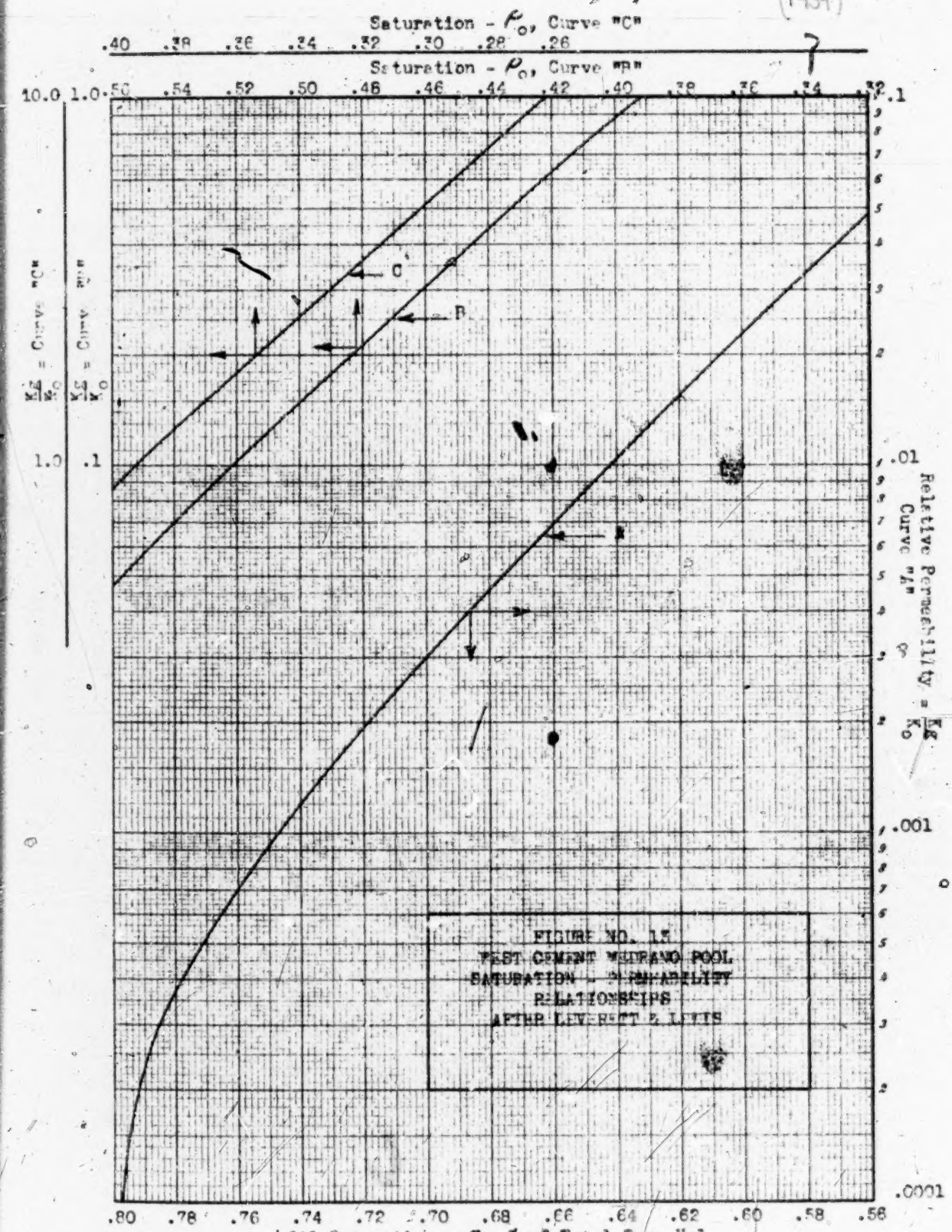


FIGURE NO. 15
TEST CEMENT MURRAY POOL
SATURATION - PERMEABILITY
RELATIONSHIPS
AFTER LIVERETT & LEWIS

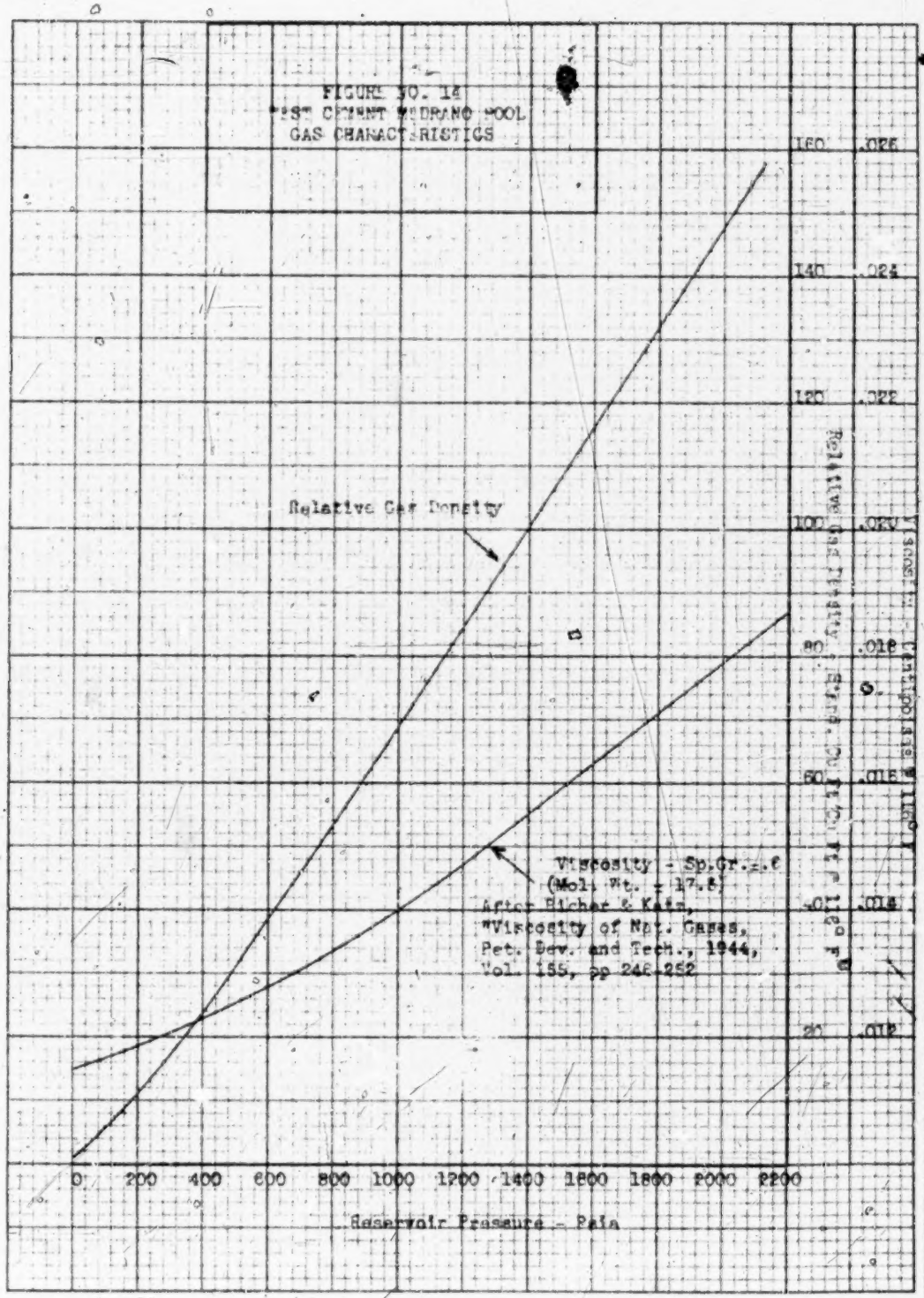


FIGURE 30. 14
GAS CHARACTERISTICS

TABLE I
WEST CUMING MEDRANO POOL
RECAPITULATION OF RESERVOIR PERFORMANCE AND ECONOMICS

	Ult. Oil Recovery-1000 Bbl			Cum. Prod. 1000 Bbl	Future Oil Recovery-1000 Bbl		
	Primary	Gas Cap Shut In	Gas Injection	7-1-66	Primary	Gas Cap Shut In	Gas Injection
Segment A	6,280	7,260	8,750	956	5,324	6,304	7,794
Segment B	5,490	7,860	9,500	1,903	3,687	6,057	7,697
Segment C	6,250	7,010	8,080	1,484	4,766	5,526	6,602
Segment D	3,920	4,440	5,300	875	2,943	3,565	4,425
Segment E	1,800	2,100	2,520	503	1,297	1,597	2,017
Total	23,840	28,670	34,150	5,621	18,019	23,049	28,535

	Primary Operation	Gas Injection Program
Future Net Revenue		
Primary Oil (1.27 x .875 x .25 x 18,019,000)	$19,078,000	
Primary Gas	1,711,000	
Total	$20,789,000	
Gas Injection-Oil (1.27 x .875 x .25 x 28,535,000)		$70,066,000
Gas Injection-Gas Sales		1,338,000
Gas Injection-Gasoline Sales		387,000
Total		$71,789,000
Investment Costs		
Primary (Plant, New Wells, etc.)	$ 540,000	
Gas Injection (Initial Investment)		$ 330,000
Gas Injection (Additional Investment)		270,000
Gas Injection (7 New Wells)		560,000
Total		$ 1,160,000
Cost of Operation		
Primary	$ 5,565,000	
Gas Injection		$ 4,715,000
Future Net Profit		
Primary	$14,644,000	
Gas Injection		$25,914,000
Additional Net Profit by Unitization & Gas Injection		$11,270,000

TABLE NO. 1-A
WEST CEMENT MEDRANO POOL
RESERVOIR ECONOMICS - PAYOUT STATUS

	Operating Year 1	2	3	4	5	At Depletion
Future Net Revenue - 1000 Dollars						
Primary - Oil	1,845	1,795	1,342	1,305	1,275	19,038
Primary - Gas	358	64	63	64	63	1,711
Sub-Total	2,203	1,859	1,405	1,369	1,338	20,749
Gas Injection - Oil	2,010	1,959	1,895	1,842	1,840	30,066
Gas Injection - Gas	13	16	21	27	32	1,336
Gas Injection - Gasoline	5	6	8	9	12	387
Sub-Total	2,028	1,981	1,924	1,878	1,884	31,789
Operating Costs - 1000 Dollars						
Primary	245	245	245	245	245	5,565
Gas Injection	195	195	195	195	195	4,715
Investment - 1000 Dollars						
Primary	0	80	80	80	0	540
Gas Injection	410	80	80	80	170	1,160
Net Profit - 1000 Dollars						
Primary	1,958	1,534	1,080	1,044	1,093	14,644
Gas Injection	1,423	1,706	1,649	1,603	1,519	25,914
Payout Status Under Unitization - 1000 Dollars						
Period	-535	172	569	559	426	
Cumulative	-538	-363	206	765	1,191	11,270

TABLE II
WEST CEMENT MEDRANO POOL
TOTAL OIL PRODUCTION

	Years	Oil Production 1,000 Bbls Per Year						Cumulative Oil Production - 1,000 Bbls					
		Seg A	Seg B	Seg C	Seg D	Seg E	Total All Segments	Seg A	Seg B	Seg C	Seg D	Seg E	Total All Segments
Before Unitization	-	956	1,803	1,484	875	503	5,621	956	1,803	1,484	875	503	5,621
After Unitization (Gas Injection)	1	447	438	383	255	384	1,907	1,403	2,241	1,867	1,130	887	7,528
	2	448	438	384	256	329	1,855	1,851	2,679	2,251	1,386	1,216	9,383
	3	447	438	383	255	273	1,796	2,298	3,117	2,634	1,641	1,489	11,179
	4	448	438	384	256	219	1,745	2,746	3,555	3,018	1,897	1,708	12,924
	5	447	438	383	255	219	1,742	3,193	3,993	3,401	2,152	1,927	14,666
	6	448	365	328	218	175	1,534	3,641	4,358	3,729	2,370	2,102	16,200
	7	384	365	327	218	116	1,412	4,025	4,723	4,056	2,588	2,220	17,612
	8	383	365	328	218	88	1,382	4,408	5,088	4,384	2,806	2,308	18,994
	9	384	365	327	218	66	1,360	4,792	5,453	4,711	3,024	2,374	20,354
	10	383	365	328	218	50	1,344	5,175	5,818	5,039	3,242	2,424	21,698
	11	334	292	273	182	39	1,120	5,509	6,110	5,312	3,424	2,463	22,818
	12	319	292	274	182	31	1,098	5,828	6,402	5,586	3,606	2,494	23,916
	13	320	292	273	182	26	1,093	6,148	6,694	5,859	3,788	2,520	25,009
	14	319	292	274	182		1,067	6,467	6,986	6,133	3,970		26,076
	15	320	292	273	182		1,067	6,787	7,278	6,406	4,152		27,143
	16	255	292	219	146		912	7,042	7,570	6,625	4,298		28,055
	17	256	292	219	146		913	7,298	7,862	6,844	4,444		28,968
	18	255	292	219	146		912	7,553	8,154	7,063	4,590		29,880
	19	256	292	219	146		913	7,809	8,446	7,282	4,736		30,793
	20	255	292	219	146		912	8,064	8,738	7,501	4,882		31,705
End of Gas Injection	21	204	234	175	117		730	8,268	8,972	7,676	4,999		32,435
	22	137	158	118	79		492	8,405	9,130	7,794	5,078		32,927
	23	102	117	88	59		366	8,507	9,247	7,882	5,137		33,293
	24	77	88	66	44		275	8,584	9,335	7,948	5,181		33,568
	25	59	67	50	34		210	8,643	9,402	7,998	5,215		33,778
	26	46	53	39	26		164	8,689	9,455	8,037	5,241		33,942
	27	36	41	31	20		128	8,725	9,496	8,068	5,261		34,070
	28	31	35	26	18		110	8,756	9,531	8,094	5,279		34,180

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TABLE III
WEST CENTENT MEDRANO POOL
DAILY OIL PRODUCTION

	Year	Oil Production - Daily Average Bbls Seg A	Seg B	Seg C	Seg D	Seg E	Total All Segments
Average Number of Oil Wells		7	8	6	4	6	31
After Unitization (Gas Injection)	1	1,225	1,200	1,050	700	1,050	5,225
	2	1,225	1,200	1,050	700	900	5,075
	3	1,225	1,200	1,050	700	750	4,925
	4	1,225	1,200	1,050	700	600	4,775
	5	1,225	1,200	1,050	700	600	4,775
	6	1,225	1,000	898	600	480	4,203
	7	1,050	1,000	898	600	324	3,872
	8	1,050	1,000	898	600	240	3,788
	9	1,050	1,000	898	600	180	3,728
	10	1,050	1,000	898	600	138	3,686
	11	915	800	750	500	108	3,073
	12	875	800	750	500	84	3,009
	13	875	800	750	500	72	2,997
	14	875	800	750	500		2,925
	15	875	800	750	500		2,925
	16	700	800	600	400		2,500
	17	700	800	600	400		2,500
	18	700	800	600	400		2,500
	19	700	800	600	400		2,500
	20	700	800	600	400		2,500
End of Gas Injection	21	560	640	480	320		2,000
	22	378	432	324	216		1,350
	23	280	320	240	160		1,000
	24	210	240	180	120		750
	25	161	184	138	92		575
	26	126	144	108	72		450
	27	98	112	84	56		350
	28	84	96	72	48		300

TABLE IV
WEST CEMENT MEDRANO POOL
TOTAL GAS PRODUCTION

	Years	Gas Production - Yearly MMcf						Cumulative Gas Production - MMcf					
		Seg A	Seg B	Seg C	Seg D	Seg E	Total All Segments	Seg A	Seg B	Seg C	Seg D	Seg E	Total All Segments
Before Unitization:													
Gas Zone								826	50,025	6,619	2,585	173	60,168
Oil Zone								725	1,415	1,474	664	403	4,681
Total								1,251	51,440	8,093	3,189	576	64,849
After Unitization:	1	403	590	290	153	498	1,934	1,954	52,030	8,383	3,342	1,074	66,783
(Gas Injection)	2	492	810	324	154	690	2,470	2,446	52,840	8,707	3,496	1,764	69,253
	3	576	1,042	392	176	900	3,088	3,022	53,882	9,099	3,674	2,664	72,341
	4	676	1,320	451	205	1,072	3,724	3,698	55,202	9,550	3,879	3,736	76,065
	5	799	1,682	518	247	1,532	4,778	4,497	56,884	10,068	4,126	5,268	80,843
	6	779	1,696	512	273	1,576	4,836	5,276	58,580	10,580	4,399	6,844	85,679
	7	903	2,010	570	314	1,391	5,188	6,179	60,590	11,150	4,713	8,235	90,867
	8	1,017	2,370	674	383	1,214	5,658	7,196	62,960	11,824	5,096	9,449	96,525
	9	1,143	2,735	799	468	1,022	6,167	8,339	65,695	12,623	5,564	10,471	102,692
	10	1,277	3,105	971	577	750	6,680	9,616	68,800	13,594	6,141	11,221	109,372
	11	1,192	2,763	930	578	467	5,930	10,808	71,563	14,524	6,719	11,688	115,302
	12	1,333	3,077	1,145	697	294	6,546	12,141	74,640	15,669	7,416	11,982	121,848
	13	1,478	3,455	1,270	625	195	7,223	13,619	78,095	16,939	8,241	12,177	129,071
	14	1,652	3,765	1,460	995		7,892	15,271	81,880	18,399	9,236		136,963
	15	1,853	4,080	1,590	1,200		8,723	17,124	85,960	19,989	10,436		145,686
	16	1,657	4,380	1,410	1,150		8,597	18,781	90,340	21,399	11,586		154,283
	17	1,864	4,635	1,620	1,380		9,499	20,645	94,975	23,019	12,966		163,782
	18	2,116	4,875	1,750	1,570		10,311	22,761	99,850	24,769	14,536		174,093
	19	2,443	5,100	2,022	1,720		11,285	25,184	104,950	26,791	16,256		185,358
	20	2,737	5,300	2,096	1,830		11,963	27,921	110,250	28,887	18,086		197,321
End of Gas Injection	21	2,470	3,145	1,855	1,560		8,990	30,421	113,375	30,739	19,606		206,311
	22	1,560	2,325	1,060	987		5,932	31,951	115,720	31,802	20,593		212,243
	23	785	936	509	595		2,827	32,736	116,658	32,311	21,188		215,070
	24	610	702	416	337		2,065	33,346	117,360	32,727	21,525		217,135
	25	278	300	181	210		969	33,624	117,660	32,908	21,735		218,104
	26	216	228	157	126		727	33,840	117,888	33,065	21,861		218,821
	27	105	125	74	78		382	33,945	118,013	33,139	21,939		219,213
	28	83	89	62	55		289	34,028	118,102	33,201	21,994		219,502

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TABLE V
WEST CEMENT HEDRANO POOL
DAILY GAS PRODUCED AND INJECTED

		Daily Gas Produced - Mcf/Day						Daily Gas Injected - Mcf/Day					
	Years	Seg A	Seg B	Seg C	Seg D	Seg E	Total All Segments	Seg A	Seg B	Seg C	Seg D	Seg E	Total All Segments
After Unitization (Gas Injection)	1	1,105	1,615	793	414	1,364	5,291	663	946	476	251	818	2,854
	2	1,348	2,220	887	421	1,890	6,766	807	888	531	252	1,135	3,613
	3	1,575	2,855	1,073	488	2,465	8,456	946	1,140	645	293	1,480	4,504
	4	1,850	3,615	1,335	562	2,940	10,202	1,110	1,445	748	338	1,795	5,400
	5	2,190	4,610	1,417	677	4,200	13,094	1,312	1,845	852	406	2,520	6,935
	6	2,130	4,640	1,402	716	4,380	13,240	1,280	1,860	843	449	2,595	7,027
	7	2,470	5,500	1,562	860	3,810	14,202	1,488	2,200	938	516	2,285	7,424
	8	2,780	6,500	1,847	1,050	3,325	15,502	1,670	2,605	1,110	630	1,992	8,002
	9	3,135	7,490	2,190	1,282	2,500	16,897	1,880	2,995	1,312	769	1,880	8,836
	10	3,500	8,510	2,655	1,578	2,050	18,293	2,100	3,400	1,595	948	-	8,043
	11	3,265	7,570	2,545	1,585	1,280	16,245	1,960	3,030	1,530	950		7,470
	12	3,650	8,420	3,145	1,915	805	17,935	2,190	3,370	1,880	1,147		8,587
	13	4,040	9,460	3,495	2,260	535	19,790	2,425	3,785	2,100	1,357		9,667
	14	4,530	10,370	3,985	2,720	-	21,605	2,720	4,150	2,410	1,636		10,915
	15	5,080	11,180	4,365	3,290		23,915	3,050	4,475	2,615	1,970		12,110
	16	4,540	12,000	3,855	3,150		23,545	2,720	4,800	2,315	1,890		11,725
	17	5,110	12,670	4,430	3,780		25,990	3,070	5,070	2,600	2,270		13,010
	18	5,800	13,380	4,810	4,300		28,290	3,480	5,350	2,830	2,580		14,240
	19	6,640	13,960	5,540	4,710		30,850	3,980	5,590	3,320	2,825		15,715
	20	7,190	14,520	5,740	5,010		32,760	4,300	5,810	3,450	3,010		16,770
End of Gas Injection	21	6,770	9,630	5,090	4,160		24,650	4,060		3,085	2,500		9,615
	22	4,270	6,380	2,910	2,705		16,265						
	23	2,150	2,570	1,390	1,630		7,740						
	24	1,670	1,925	1,140	925		5,660						
	25	762	823	499	876		2,960						
	26	592	625	429	345		1,991						
	27	257	343	202	214		1,046						
	28	227	324	171	151		873						

TABLE VI
WEST CEMENT HEDRANO POOL
TOTAL VOLUMES OF INJECTED GAS

		Gas Injected - MMcf Per Year						Cumulative Gas Inject n - MMcf					
	Year	Seg A	Seg B	Seg C	Seg D	Seg E	Total All Segments	Seg A	Seg B	Seg C	Seg D	Seg E	Total All Segments
After Unitization	1	242	336	174	92	299	1,043	242	336	174	92	299	1,043
	2	294	324	194	92	415	1,319	536	660	368	184	714	2,362
	3	345	417	235	107	541	1,645	881	977	603	291	1,255	4,007
	4	405	528	271	143	645	1,972	1,286	1,505	874	414	1,900	5,979
	5	479	673	311	148	920	2,531	1,765	2,178	1,185	562	2,820	8,510
	6	467	678	307	165	947	2,564	2,232	2,856	1,492	727	3,767	11,074
	7	542	804	342	188	835	2,711	2,774	3,660	1,834	915	4,602	13,785
	8	609	947	405	230	728	2,919	3,383	4,607	2,239	1,145	5,330	16,704
	9	685	1,091	479	281	614	3,150	4,068	5,698	2,718	1,426	5,944	19,854
	10	768	1,241	583	349		2,938	4,833	6,939	3,301	1,775		22,792
	11	715	1,105	554	347		2,721	5,548	8,044	3,855	2,122		25,513
	12	800	1,330	692	419		3,141	6,348	9,274	4,547	2,541		28,654
	13	886	1,380	766	495		3,527	7,234	10,654	5,313	3,036		32,181
	14	991	1,511	872	597		3,971	8,225	12,165	6,185	3,633		36,152
	15	1,111	1,632	960	720		4,423	9,336	13,797	7,145	4,353		40,575
	16	993	1,752	840	691		4,276	10,329	15,549	7,985	5,044		44,851
	17	1,119	1,850	970	828		4,767	11,448	17,399	8,955	5,872		49,618
	18	1,270	1,948	1,051	944		5,213	12,718	19,347	10,006	6,816		54,831
	19	1,455	2,040	1,214	1,032		5,741	14,173	21,387	11,220	7,848		60,572
	20	1,640	2,120	1,286	1,070		6,116	15,813	23,507	12,476	8,918		66,688
	21	1,481		1,112	911		3,504	17,294		13,588	9,859		70,192

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TABLE VII
WEST CEMENT MEDRANO POOL
BOTTOM-HOLE PRESSURES

Years	Average Pressure - PSIA				
	Seg A	Seg B	Seg C	Seg D	Seg E
0	1,500	880	1,150	1,250	1,440
1	1,490	865	1,140	1,225	1,400
2	1,470	830	1,115	1,180	1,280
3	1,455	800	1,095	1,160	1,180
4	1,425	770	1,060	1,100	1,040
5	1,400	740	1,025	1,065	920
6	1,370	705	985	1,020	780
7	1,340	680	950	995	665
8	1,300	645	890	950	535
9	1,260	620	840	925	400
10	1,220	580	770	885	250
11	1,175	555	720	855	170
12	1,110	510	650	800	100
13	1,030	480	600	740	65
14	960	440	545	665	
15	875	400	500	600	
16	770	360	440	520	
17	680	315	395	455	
18	580	260	360	380	
19	500	230	300	330	
20	400	180	245	270	
21	330	170	195	225	
22	255	140	150	175	
23	200	125	120	140	
24	160	105	95	100	
25	135	95	80	75	
26	100	80	65	65	
27	70	70	60	60	
28	55	60	55	55	

After Unitization (Gas Injection)

End of Gas Injection

TABLE VIII
WEST CEMENT MADRANO POOL
COMPARISON OF CURRENT RELATIVE OIL & GAS PORE VOLUME PRODUCTION RATES

	Seg A	Seg B	Seg C	Seg D	Seg E	Total
Oil Zone						
Average Daily Oil Production-Bbl	910	1,715	700	700	1,050	5,073
Average Daily GOR-cu ft/bbl	800	1,000	800	600	1,000	
Average Daily Gas Production-Mcf	728	1,715	560	420	1,050	4,471
Weighted Average Oil Zone Pressure, psia*	1,700	1,100	1,350	1,450	1,640	
Formation Volume Factor	1.137	1.090	1.115	1.122	1.474	
Compressibility Factor	.852	.890	.872	.865	.854	
Solution GOR-cu ft/bbl	342	225	276	294	332	
Excess Gas-cu ft/bbl	458	775	524	706	668	
Daily Pore Volume Voided by Excess Gas - Bbl	605	2,110	685	870	1,055	
Daily Pore Volume Voided by Oil-Bbl	1,035	1,881	780	779	1,180	
Total Daily Pore Volume Voided-Bbl	1,640	4,991	1,465	1,149	2,235	
Ratio of Gas Cap to Oil Zone	.458	1.880	.435	.640	.742	
Equivalent Pore Volume in Gas Cap-Bbl	753	2,380	725	774	1,658	13,250
Gas Zone						
Average Daily Gas Production-Mcf	578	15,740	1,790	3,270	2,675	23,813
Weighted Average Gas Zone BHP-Psia	1,747	890	1,010	1,127	1,170	
Compressibility Factor	.870	.910	.895	.886	.887	
Daily Pore Volume Voided-Bbl	1,070	45,300	4,620	7,480	5,840	64,310
Ratio of Gas to Oil Voidage	1.4	4.8	6.4	10.2	7.5	4.9

* Reservoir pressures estimated from static BHP tests.

TABLE IX
WEST CLEMENT MIPANO POOL
CALCULATION OF OIL IN PLACE

Item No.		Units	A	B	C	D	E	Total
1	Reservoir Volume (From Sand Thickness Map)	AF	27,745	47,307	26,720	15,468	7,237	124,073
2	Porosity (From Core Data)	%	15	17	17	17	16	
3	Bore Volume 7,758 x Item 2	B/AF	1,168	1,319	1,319	1,319	1,242	
4	Original Reservoir Pressure at G-O Contact	Psia	2,000	2,000	2,000	2,000	2,000	
5	Original Reservoir Pressure at Midpoint Oil Zone	Psia	2,130	2,130	2,130	2,130	2,073	
6	Reservoir Pressure at G-O Contact at t_o*	Psia	1,027	1,142	1,757	2,000	2,000	
7	Reservoir Pressure at Midpoint Oil Zone at t_o	Psia	2,057	1,272	1,883	2,130	2,073	
8	Original Solution Gas at Midpoint Oil Zone (CF at Std. Conds./Bbl of S.T. Oil)	CF/Bbl	427	427	427	427	415	
9	Gas in Solution at Midpoint Oil Zone at t_o (CF at Std. Cond/Bbl of S.T. Oil)	CF/Bbl	412	260	377	427	415	
10	Gas Evolved at Midpoint Oil Zone at t_o (CF at Std. Cond./Bbl of S.T. Oil)	CF/Bbl	15	167	50	0	0	
11	Compressibility Factor at t_o @ 116° F)		.872	.872	.839	.830	.831	
12	Volume of 1 Standard Cubic Foot of Gas in Reservoir at t_o (Item 7 / 14.7 x 520/576 x 1/Item 11) = (CF @ Reservoir Cond. per CF at Std. Conds.)		.00658	.01118	.00725	0	0	
13	Oil Expansion Factor at t_o (Vol. reservoir oil phase derived from one vol. S.T. Oil)		1.169	1.109	1.149	1.165	1.161	
14	Gas Evolved at t_o (CF @ Std. Conds/Bbl of Reservoir Oil) = Item 10 x Item 13	CF/Bbl	12.92	150.5	47.5	0	0	
15	Volume of Evolved Gas in Reservoir at t_o (CF @ Reservoir Conds./Bbl of Reservoir Oil) = Item 14 x Item 12	CF/Bbl	.0851	1.685	.3150	0	0	
16	Interstitial Water	%	20	20	20	20	20	
17	Percent Total Pore Vol. Occupied by Gas at t_o = (1 - .2) x [Item 15 ÷ 5.61] x 100	%	1.217	23.95	4.48	0	0	
18	Percent Total Pore Vol. Occupied by Oil at t_o = 80 - Item 17	%	78.787	56.05	75.52	80	80	
19	Stock Tank Oil in Place at t_o (Item 1 x Item 3 x Item 18 ÷ Item 13)	MM Bbl	21.9	31.4	22.8	13.9	6.2	96.2

t_o is time of oil discovery..80

[fol. 140] Appendix

A. Reservoir Performance Calculations

Reservoir performance calculations were made, using a differential equation formulated by Dr. M. Muskat in "The Production Histories of Oil Producing Gas Drive Reservoirs," Journal of Applied Physics, Vol. 16, No. 3, March 1945. All basic data necessary for these calculations are included in this report.

The relative permeability—saturation relationship curve is shown in Figure No. 13, and was obtained from Leverett and Lewis, "Steady Flow of Gas-Oil-Water Mixtures Through Unconsolidated Sands," A. I. M. E. Transactions, Vol. 142, 1941. Reservoir oil characteristics were obtained from bottom-hole sample analyses of oil from Gulf-Sherritt No. 1 and Stephens-Pierson No. 1 as shown in Figures 11 and 12. These data include the gas solubility, shrinkage, and reservoir oil viscosity. Relative gas density was calculated from gas analysis data on Phillips-Oaks No. 1 and is shown in Figure No. 14. Gas viscosity data *was* obtained from Bicher and Katz, "Viscosity of Natural Gases," A. I. M. E. Transactions, Vol. 155, 1944.

For the purpose of these calculations, the oil saturation in the gas cap and the volume of dissolved gas in the oil in the gas cap was neglected, because the influence on the results would be almost negligible. All calculations that were made assumed that there would be no change in the gas-oil contact as determined by the Sub-Committee of geologists.

Performance calculations were made for each segment for the operating conditions of (1) gas cap producing, (2) gas cap shut in, and (3) gas injection into the gas cap. In some cases several different injection rates were computed, but due to uncertainties as to the amount of gas available [fol. 141] for injection and the economics of injection, a conservative rate of 60% of the produced gas in Segments A, C, D, and E and 40% in Segment B was selected. Segment B has a very much larger ratio of gas cap volume to oil zone volume than the other segments. Accordingly, gas-oil ratios would be expected to rise much higher than in the other segments, neglecting the influence of gravity segrega-

tion. It is intended that all calculations made for this report should be considered only as a guide as to what may be anticipated by a conservative gas injection program. If a unit is formed, it will be necessary to closely follow the performance history and adjust oil production rates and gas injection rates to obtain a maximum economic recovery of oil from the reservoir. The influence of gravity segregation will modify the results obtained, but it cannot be calculated to what degree this will affect the recovery. It would probably be good practice in the beginning to return all available gas after fuel for pumping equipment, fuel for the plant, line losses, and gas lift operations, if any, have been satisfied. Thereafter, reservoir performance will dictate the requirements as the program progresses. At this time it is believed sufficient to show that a very substantial return on the investment is indicated by the conservative program outlined in this report.

The theoretical calculations of gas-oil ratios and pressure declines were adjusted to conform with past performance of the reservoir. In some cases adjustments were minor and in other instances a substantial adjustment was necessary. It will be noted that the curves are shown specifically to be plotted as bottom-hole pressure vs. pore volume rather than reservoir pressure vs. pore volume. The theoretical calculations indicated that actual reservoir pressures were on the order of 200 psi in excess of actual measured bottom-hole pressures. This condition is, of [fol. 142] course, as would be expected, and in order to conform with known values, the pressure curves were shifted to correspond with bottom-hole pressures. However, this modification would not be expected to change the results of the calculations. The performance calculations were first carried to depletion of the reservoir, and then modified by stopping injection of gas at about 21 years and allowing the pool to deplete without further benefit of additional energy. At this time gas-oil ratios were quite high, and even though 7 years is shown for this depletion, it will be noted that the relative amount of oil recovery is very small. The modification of this phase of the performance was done without calculation, because the overall error in recovery would be small in either case.

Undoubtedly, gravity drainage will play some part in the recovery mechanism of this reservoir, and all performance calculations must be given latitude in this respect.

The production rates shown in the figures and tables were assigned arbitrarily in accordance with the amount of oil recoverable, conservative estimates of well capacities, and depletion of the reservoir in a reasonable length of time. The starting point of the program was assigned to be a production of 175 barrels per day per well since that figure is the present allowable. For ease of calculation, a 5-year stepwise decrease of productive rates was assumed. All segments but Segment E were computed at rates which would deplete them in 28 years. Segment E being of thin sand section will decline more rapidly if high production rates are used as indicated in Figure No. 10 and Table II.

It was intended that oil production rates should be declined in a manner that would make it possible to maintain reasonably uniform gas volumes to the compressor plant as [fol. 143] gas-oil ratios are increased. This was not entirely accomplished but it is believed that the volumes shown will require a plant investment near the minimum.

The Sub-Committee is of the opinion that an initial oil production rate of 225 barrels per well per day would be well within the present production capacity of the pool, and would be more desirable than the present allowable of 175 barrels per day. This initial rate would mean a more rapid decline in oil production and would shorten the period required to deplete the reservoir.

B. Economics

Future net revenue shown in Table I is the revenue to operators 7/8 interest less 5% gross production tax. The price of oil under both primary and gas injection programs is $1.27 per barrel. Future net revenue from gas for primary recovery is based on a net price of 5¢ per Mcf above well-head pressure of 500 psi and a net price of 3¢ per Mcf, assuming 2¢ per Mcf compression charges, below a well-head pressure of 500 psi. Future net revenue from gas sales under a gas injection program is based on a net price of 3¢ per Mcf.

From data in Table XIII it was estimated that an average

of a 0.1 GPM of gasoline could be obtained by compression during the life of the project. The total net revenue at $1.27 per barrel would thus be $387,000.

Pay-out of a gas injection program is shown in Table I-A. It is based on the additional oil recovery by gas injection operations over that expected from primary recovery, assuming that both programs would have a productive life on the order of 28 years. It will be noted that primary oil recovery rates would be expected to decline much more rapidly than if gas were injected into the reservoir. Gas allowables were decreased in the second year under primary [fol. 144] operation in accordance with relative voidage rates in Table VIII.

Investment costs for primary recovery include $300,000 for a compressor plant to compress gas when well head pressures fall below pipe line pressure. At present, the pressure is declining in the gas cap at a rate of 131 psi per year. Although not indicated in Table I-A, this added investment will probably have to be made within 5 years. During primary operations it is expected that two more oil wells will be drilled at an average cost of $80,000 per well.

Investment costs under a gas injection program include $600,000 for compression equipment and $560,000 to drill 7 more oil wells at $80,000 each. Compression equipment includes an initial plant investment of $200,000 for two 600 horsepower compressors and building, $25,000 for a dehydrator, $78,000 for gathering lines and orifice meter settings, $27,000 for discharge lines, and in addition three 600 horsepower compressors at $90,000 each to be added in the fifth, twelfth, and fifteenth years. Total investment is $1,160,000. The additional 7 oil wells are to be drilled in favorable locations low on the structure. These wells will be used to help maintain production rates when high gas-oil ratio wells are shut in. It is estimated that an average of 31 wells can then be produced during the life of the project.

Cost of operations, including district expense and total lifting cost for primary production at present rates, was estimated at $540 per well month for oil wells and $75 per well month for gas wells. Under a gas injection program $450 per well month was estimated as total lifting cost and

district expense, and in addition $2,500 per month was added for gas injection costs.

[fol. 145] C. Participating Interest of Operators in a Unit Operation

In a meeting of the Operators on October 18, 1945, it was recommended that participating interest in a unit program be based on the dollar value of recoverable hydrocarbons presently in place under each lease. The ratio of this value to the whole would be the participation of that lease in the unit program.

Recoverable oil, valued at $1.27 per barrel, was determined by applying a 50% recovery factor to the oil in place in accordance with the meeting of October 18, 1945. The oil in place for each segment was determined as shown in Table IX. The stock tank oil in place on each lease in each segment was computed as being the ratio that the acre feet under that lease bears to the total acre feet in that segment. Recoverable stock tank oil was then calculated to be 50% of the oil in place minus the cumulative production. This oil was valued at $1.27 per barrel.

Recoverable gas was computed by applying a factor of 95% to the gas remaining on each property, as calculated by pore volume corrected for present pressure. This gas was valued at 5¢ per Mcf. The total dollar value of hydrocarbons for each lease, expressed as a percentage of the pool total, is the participating interest of each lease in the unit program. Table X shows the steps in computing the value of hydrocarbons under each lease.

Table XI shows participating interest of all leases in a unit program. It also shows operators working interest in various leases and in the pool total. Partners in working interest not shown in Table XI are shown in Table XII.

(Here follow 3 Pasters, side folios 146-151)

[fol. 146]

TABLE X

WEST CEMENT MEDRANO POOL

VALUE OF RECOVERABLE OIL & GAS

Company and Lease	Oil Zone 1 Oil Zone Acre Feet	2 Percent Total Acre Ft	3 S.T. Oil in Place @ t_0 MM Bbls	4 Recoverable S.T. Oil @ t_0 MM Bbls	5 S.T. Oil Prod. to t_1 MM Bbl	6 Recoverable S.T. Oil @ t_1 MM Bbls	Gas Zone 7 Gas Zone Acre Feet	8 Total Pore Vol. Filled w/Gas MMcf	9 Pseudo Pressure P/Z	10 Gas Conversion Factor cu ft/cu ft	11 Gas in Gas Cap-S.C. MMcf	12 Recoverable Gas—S.C. MMcf	Value Oil and Gas 13 Value of Recoverable Oil—$1000	14 Value of Recoverable Gas—$1000	15 Total Value $1000
SEGMENT A															
Gulf															
Pell	2,980	10.68	2.34	1.17	0.04	1.13	47	0.25	1,715	105.5	26.4	25.1	1,436	1.3	1,437.3
Sherritt	14,820	53.50	11.72	5.86	0.74	5.12	1,425	7.44	1,300	79.9	594.0	565.0	6,500	28.2	6,528.2
Ray Stephens Inc.															
Farwell	—	—	—	—	—	—	4,580	23.94	1,600	98.2	2,350.0	2,232.0	—	111.8	111.8
Griffin	—	—	—	—	—	—	77	0.40	1,750	107.4	42.9	40.7	—	2.0	2.0
Odla Table	438	1.58	0.34	0.17	—	0.17	—	—	—	—	—	—	216	—	216.0
Wilhite (N/2 SE less 10 Acres)	20	0.07	0.02	0.01	—	0.01	1,386	7.24	1,620	99.5	721.0	685.0	13	34.2	47.2
Wilhite (NW SE SE)	—	—	—	—	—	—	400	2.09	1,490	91.5	191.0	181.6	—	9.1	9.1
Wilhite (SE SE SE)	—	—	—	—	—	—	775	4.04	1,400	85.9	347.0	330.0	—	16.5	16.5
Wilhite (SW NE SE)	—	—	—	—	—	—	270	1.41	1,610	98.8	139.2	132.3	—	6.6	6.6
Wilhite (NE SE SE)	—	—	—	—	—	—	450	2.35	1,520	93.3	219.4	206.5	—	10.3	10.3
Wilhite (NE SW SE)	8	0.03	0.01	0	—	—	375	1.96	1,490	91.5	179.3	170.5	—	8.5	8.5
Stephens Pet.															
Brown	202	0.72	0.16	0.08	—	0.08	—	—	—	—	—	—	102	—	102.0
Dome-Bo	1,600	5.76	1.26	0.63	—	0.63	—	—	—	—	—	—	800	—	800.0
Pohleman	2,278	8.21	1.80	0.90	0.14	0.76	—	—	—	—	—	—	965	—	965.0
Samwill	1,100	3.96	0.86	0.43	0.03	0.40	1,106	5.78	1,420	87.1	504.0	479.0	508	24.0	532.0
Smith	4,125	14.86	3.25	1.63	—	1.63	—	—	—	—	—	—	2,070	—	2,070.0
Phillips															
Fletcher	174	0.63	0.14	0.07	—	0.07	1,785	9.33	1,330	81.6	761.0	723.0	90	36.1	126.1
Sub-Total Segment A	27,745	100.00	21.90	10.95	0.95	10.00	12,676	66.23	—	—	6,075.2	5,770.7	12,700	288.6	12,988.6
SEGMENT B															
Amerada															
Beemer	1,460	3.08	0.97	0.48	0.11	0.37	—	—	—	—	—	—	470	—	470.0
Gulf															
Sherritt	4,465	9.45	2.97	1.49	0.18	1.31	—	—	—	—	—	—	1,664	—	1,664.0
Magnolia															
Dunn	—	—	—	—	—	—	157	0.93	993	61.0	56.7	53.8	—	2.7	2.7
Henley	—	—	—	—	—	—	2,660	15.77	993	61.0	961.0	912.5	—	45.6	45.6
Medrano	—	—	—	—	—	—	166	0.98	993	61.0	59.7	56.7	—	2.8	2.8
Niles	—	—	—	—	—	—	5,440	32.20	993	61.0	1,963.0	1,866.0	—	93.1	93.1
Sames	—	—	—	—	—	—	9,735	57.60	993	61.0	3,510.0	3,335.0	—	166.5	166.5
Palmer															
Sterba	1,238	2.62	0.82	0.41	0	0.41	8,130	48.10	934	57.3	2,756.0	2,619.0	521	130.8	651.8
[fol. 147]															
Phillips															
Farwell	—	—	—	—	—	—	6,704	39.67	993	61.0	2,418.0	2,297.0	—	114.9	114.9
Fletcher	7,720	16.31	5.12	2.56	0.33	2.23	12,110	71.75	1,031	63.3	4,540.0	4,315.0	2,832	215.6	3,047.6
Garn	—	—	—	—	—	—	1,633	9.67	993	61.0	590.0	560.5	—	28.0	28.0
Garrison	4	0.01	0	—	—	—	11,640	68.90	993	61.0	4,200.0	3,990.0	—	199.5	199.5
Oaks	16,640	35.16	11.04	5.52	0.67	4.85	6,880	40.75	926	56.9	2,320.0	2,204.0	6,160	110.2	6,270.2
Ray Stephens Inc.															
Farwell	—	—	—	—	—	—	1,547	9.15	993	61.0	558.0	531.0	—	26.5	26.5
Griffin	—	—	—	—	—	—	250	1.48	993	61.0	90.2	85.6	—	4.3	4.3
Melton	—	—	—	—	—	—	2,030	12.02	993	61.0	733.0	696.0	—	34.8	34.8
Stephens Pet.															
Plummer W/2 SW	6,060	12.81	4.02	2.01	0.22	1.79	—	—	—	—	—	—	2,272	—	2,272.0
Plummer E/2 SW	9,720	20.56	6.46	3.23	0.30	2.93	125	0.74	993	61.0	45.2	42.9	3,720	2.1	3,722.1
Sunray															
Dixon	—	—	—	—	—	—	8,320	49.25	993	61.0	3,000.0	2,850.0	—	142.5	142.5
Loose	—	—	—	—	—	—	3,535	20.92	993	61.0	1,277.0	1,213.0	—	60.6	60.6
Uiery	—	—	—	—	—	—	8,000	47.40	993	61.0	2,888.0	2,742.0	—	137.1	137.1
Sub-Total Segment B	47,307	100.00	31.40	15.70	1.81	13.89	89,062	527.28	—	—	31,965.8	30,370.0	17,639	1,517.6	19,156.6
SEGMENT C															
Amerada															
Hartshorn	827	3.14	0.72	0.36	—	0.36	—	—	—	—	—	—	457	—	457.0
Little Chief	2	0.01	0	—	—	—	—	—	—	—	—	—	—	—	—
Anderson Prichard															
Hays	748	2.84	0.65	0.33	0.02	0.31	2,595	15.39	1,128	69.2	1,064.0	1,012.0	394	50.6	444.6

TABLE X—Continued

WEST CEMENT MEDRANO POOL

VALUE OF RECOVERABLE OIL & GAS

Company and Lease	Oil Zone 1 Oil Zone Acre Feet	2 Percent Total Acre Ft	3 S.T. Oil in Place @ t_0 MM Bbls	4 Recoverable S.T. Oil @ t_0 MM Bbls	5 S.T. Oil Prod. to t_1 MM Bbl	6 Recoverable S.T. Oil @ t_1 MM Bbls	Gas Zone 7 Gas Zone Acre Feet	8 Total Pore Vol. Filled w/Gas MMcf	9 Pseudo Pressure P/Z	10 Gas Conversion Factor cu ft/cu ft	11 Gas in Gas Cap-S.C. MMcf	12 Recoverable Gas—S.C. MMcf	Value Oil and Gas 13 Value of Recoverable Oil—$1000	14 Value of Recoverable Gas—$1000	15 Total Value $1000
Gulf															
Holland	70	0.27	0.06	0.03	—	0.03	—	—	—	—	—	—	.38	—	38.0
Magnolia															
Cadlo-Rowe	—	—	—	—	—	—	168	1.00	1,084	66.6	66.6	63.4	—	3.2	3.2
Henley	2,040	7.75	1.77	0.88	0.15	0.73	1,083	6.41	1,084	66.6	426.5	405.0	926	20.2	946.2
Lindsay	—	—	—	—	—	—	1,082	6.41	1,128	69.2	443.0	421.5	—	21.0	21.0
Medrano	—	—	—	—	—	—	7,600	45.00	1,084	66.6	2,995.0	2,845.0	—	142.0	142.0
Niles	—	—	—	—	—	—	484	2.86	1,060	65.0	185.9	176.7	—	8.8	8.8
Palmer															
Sterba	8,150	31.00	7.06	3.53	0.30	3.23	—	—	—	—	—	—	4,100	—	4,100.0
Phillips															
Hartshorn	7,125	27.04	6.16	3.08	0.55	2.53	60	0.35	1,148	70.4	24.6	23.4	3,210	1.1	3,211.1
Margaret	4,480	17.62	3.88	1.94	0.23	1.71	—	—	—	—	—	—	2,173	—	2,173.0
Oaks	318	1.21	0.28	0.14	—	0.14	—	—	—	—	—	—	178	—	178.0
[fol. 148]															
Stephens Pet.															
Pierson	2,550	9.72	2.22	1.11	0.24	0.87	—	—	—	—	—	—	1,106	—	1,106.0
Sub-Total Segment C	26,320	100.00	22.80	11.40	1.49	9.91	13,072	77.42	—	—	2,205.6	4,947.0	12,582	246.9	12,828.9
SEGMENT D															
Amerada															
Edwards	3,940	25.49	3.54	1.77	0.22	1.55	—	—	—	—	—	—	1,966	—	1,966.0
Hartshorne	3,410	22.05	3.06	1.53	0.33	1.20	—	—	—	—	—	—	1,522	—	1,522.0
No-Ho-To	2	0	—	—	—	—	—	—	—	—	—	—	—	—	—
Wood	165	1.07	.15	.08	0	.08	—	—	—	—	—	—	102	—	102.0
Magnolia															
I. Edwards	2,881	18.63	2.59	1.29	0.26	1.03	268	1.59	1,430	87.8	139.9	133.0	1,300	6.6	1,306.6
L. L. Edwards	2,135	13.78	1.92	.96	0.07	.89	1,810	10.73	1,400	85.8	921.0	875.0	1,130	43.7	1,173.7
Haralson	—	—	—	—	—	—	1,096	6.50	1,365	83.8	545.0	518.0	—	25.9	25.9
Lindsay	—	—	—	—	—	—	3,562	21.12	1,365	83.8	1,780.0	1,691.0	—	84.6	84.6
Medrano	54	0.35	.05	.03	—	.03	3,132	18.59	1,400	85.8	1,595.0	1,516.0	38	75.8	113.8
Phillips															
Hartshorn	2,881	18.63	2.59	1.29	—	1.29	—	—	—	—	—	—	1,640	—	1,640.0
Potter															
Davis	—	—	—	—	—	—	18	0.11	1,365	83.8	9.2	8.7	—	0.4	0.4
Sub-Total Segment D	15,468	100.00	13.90	6.95	0.88	6.07	9,886	58.64	—	—	4,990.1	4,741.7	7,698	237.0	7,935.0
SEGMENT E															
Amerada															
McClaren	368	5.09	.32	.16	—	.16	—	—	—	—	—	—	203	—	203.0
Anderson-Prichard															
Davis	75	1.04	.06	.03	—	.03	1,150	6.41	1,580	97.1	622.5	592.0	38	29.6	67.6
McClaren	191	2.64	.17	.09	—	.09	302	1.68	1,805	111.0	186.5	177.3	115	8.8	123.8
Prentice	2,460	34.00	2.11	1.05	.14	.91	641	3.56	1,648	101.1	360.0	342.0	1,154	17.1	1,171.1
Pace	—	—	—	—	—	—	24	.13	1,772	109.0	14.2	13.5	—	.6	.6
Pickard	1,092	15.12	.94	.47	.17	.30	—	—	—	—	—	—	380	—	380.0
Walker	1,346	18.61	1.15	.57	.07	.50	—	—	—	—	—	—	634	—	634.0
Magnolia															
L. L. Edwards	38	.53	.03	.02	—	.02	—	—	—	—	—	—	25	—	25.0
Gingrich	—	—	—	—	—	—	496	2.76	1,710	105.0	289.9	275.2	—	13.7	13.7
Gregory	—	—	—	—	—	—	36	.20	1,841	113.2	22.6	21.5	—	1.1	1.1
Haralson	505	6.99	.43	.22	—	.22	201	1.12	1,775	109.0	122.0	116.0	279	5.8	284.8
Lindsey	—	—	—	—	—	—	167	.93	1,841	113.2	105.3	100.3	—	5.0	5.0
Potter															
Davis	2	.03	—	—	—	—	572	3.18	1,710	105.0	334.0	317.5	—	15.9	15.9
[fol. 149]															
Ramsey															
Davis	—	—	—	—	—	—	527	2.93	1,678	103.0	302.0	287.1	—	14.4	14.4
Gingrich	—	—	—	—	—	—	24	.13	1,710	105.0	13.7	13.0	—	.7	.7
Rookstool															
Davis	—	—	—	—	—	—	540	3.01	1,555	95.5	287.5	273.2	—	13.7	13.7
Stephens Pet.															
Walker	1,156	15.95	.99	.49	.13	.36	685	3.81	1,586	97.3	371.0	352.5	457	17.7	474.7
Sub-Total Segment E	7,233	100.00	6.20	3.10	.51	2.59	5,365	29.85	—	—	3,031.2	2,881.1	3,285	144.1	3,429.1
TOTAL POOL	124,073	—	96.20	48.10	5.64	42.46	130,051	759.42	—	—	51,267.9	48,710.5	53,904	2,434.2	56,338.2

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TABLE XI

WEST CEMENT MEDRANO POOL

PARTICIPATION OF LEASES & OPERATORS IN UNIT

		Value of Recoverable Oil & ~~Gas~~ — 1000 Dollars								
	Company and Lease	Seg A	Seg B	Seg C	Seg D	Seg E	Total Value $1000	Percent of Pool Total	Operator's Working Interest Percent	Operators Percent of Pool Total
Amerada	Beemer		470.0				470.0	.835	100	.835
	Edwards				1,966.0		1,966.0	3.490	100	3.490
	Hartshorn			457.0	1,522.0		1,979.0	3.510	100	3.510
	McClaren					203.0	203.0	.360	100	.360
	Woods				102.0		102.0	.182	100	.182
	Sub-Total							8.377		8.377
APCO	Davis					67.6	67.6	.120	100	.120
	Hays			444.6			444.6	.789	37.5	.295
	McClaren					123.8	123.8	.220	100	.220
	Pace					0.6	0.6	.001	100	.001
	Pickard					380.0	380.0	.675	100	.675
	Prentice					1,171.1	1,171.1	2.080	100	2.080
	Walker					634.0	634.0	1.125	100	1.125
	Sub-Total							5.010		4.516
Gulf	Holland			38.0			38.0	.068	100	.068
	Pell	1,437.3					1,437.3	2.545	100	2.545
	Sherritt	6,528.2	1,664.0				8,192.2	14.530	100	14.530
	Sterba (Palmer)*								*	
	Smith (Stephens)**								**	
	Sub-Total							17.143		17.143
Magnolia	Caddo-Rowe			3.2			3.2	.006	100	.006
	Dunn		2.7				2.7	.005	100	.005
	I. Edwards				1,306.6		1,306.6	2.320	100	2.320
	L. Edwards				1,173.7	25.0	1,198.7	2.120	100	2.120
	Gingrich					13.7	13.7	.024	100	.024
	Gregory					1.1	1.1	.002	100	.002
	Haralson				25.9	284.8	310.7	.551	100	.551
	Henley		45.6	946.2			991.8	1.761	100	1.761
	Lindsey			21.0	84.6	5.0	110.6	.196	100	.196
	Medrano		2.8	142.0	113.8		258.6	.459	100	.459
	Niles		93.1	8.8			101.9	.181	100	.181
	Sames		166.5				166.5	.295	100	.295
	Sub-Total							7.920		7.920
Palmer	Sterba*		651.8	410.0			4,751.8	8.450	100	8.450
Phillips	Farwell		114.9				114.9	.205	100	.205
	Fletcher	126.1	3,047.6				3,173.7	5.630	100	5.630
	Garn		28.0				28.0	.050	87.5	.044
	Garrison		199.5				199.5	.355	50	.177
	Hartshorn			3,211.1	1,640.0		4,851.1	8.610	100	8.610
	Margaret			2,173.0			2,173.0	3.860	100	3.860
	Oaks		6,270.2	178.0			6,448.2	11.440	81.25	9.300
	Dixon (Sunray)								50	.177
	Sub-Total							30.150		28.003
[fol. 151] Potter	Davis					15.9	16.3	.029	100***	.029
Ramsey	Davis					14.4	14.4	.026	100***	.026
	Gingrich					.7	.7	.001	100***	.001
	Hays (APCO)								37.5	.295
	Smith (Steph. Pet.)***									
	Sub-Total							.027		.322
Rookstool	Davis					13.7	13.7	.024	100***	024

Ramsey	Davis					14.4	14.4	.026	100***	.026
	Gingrich					.7	.7	.001	100***	.001
	Hays (APCO)								37.5	.295
	Smith (Steph. Pet.)***									
	Sub-Total							.027		.322
Rookstool	Davis					13.7	13.7	.024	100***	.024
Ray Step. Inc.	Griffin S/2 NW SE		1.55				1.55	.003	100	.003
	Griffin S/2 NE SE	2.0	2.75				4.75	.008	31.25	.003
	Melton SW SE SE		17.0				17.0	.030	38.65	.012
	Melton SW SW SE		17.8				17.8	.032	26.22	.008
	Odla-Table	216.0					216.0	.385	100	.385
	Wilhite: N/2 SE less 10 Acres	47.2					47.2	.084	50	.042
	NW SE SE	9.1					9.1	.016	50	.008
	SE SE SE	16.5					16.5	.029	50	.015
	SW NE SE	6.6					6.6	.012	20.0694	.002
	NE SE SE	10.3					10.3	.018	55.9375	.010
	NE SW SE	8.5					8.5	.015	32.4	.005
	Farwell	111.8	26.5				138.3	.246	100	.246
	Samwil (Stephens Pet.)								5.46875	.052
	Sub-Total							.878		.791
Stephens Pet.	Dome-Bo	800.0					800.0	1.420	100	1.420
	Pierson			1,106.0			1,106.0	1.970	52.46	1.033
	Plummer, W/2		2,272.0				2,272.0	4.030	90.625	3.660
	Plummer, E/2		3,722.1				3,722.1	6.610	89.73214	5.940
	Pohleman	965.0					965.0	1.720	65.625	1.129
	Samwil	532.0					532.0	.944	76.5625	.724
	Smith	2,070.0					2,070.0	3.670	100.00**	3.670
	Walker					474.7	474.7	.840	70.3125	.591
	Brown	102.0					102.0	.182	100.00	.182
	Sub-Total							21.386		18.349
Sunray	Dixon		142.5				142.5	.254	50	.177
	Loose		60.6				60.6	.108	100	.108
	Ulery		137.1				137.1	.244	100	.244
	Garrison (Phillips)								50	.178
	Sub-Total							.606		.707
Others	(See Table XII)									5.369
TOTAL POOL		12,988.6	19,156.6	12,828.9	7,935.0	3,429.1	56,338.2	100.000		100.000

* Gulf owns all mineral rights below 6000' plus 1/8 of 7/8 ORR above 6000'.
** Gulf interest is in N.P.
*** Interest not-known.

[fol. 152]

Table XII

West Cement Medrano Pool
Non-Operating Partner's
Working Interest

Partner & Lease	Percent of Working Interest
Corporations	
Caddo Oil Company	
Hays (APCO)	25.0
Cities Service Oil Company	
Oaks (Phillips)	12.5
Foster Petroleum Company	
Oaks (Phillips)	6.25
Gamble Bros.	
Griffin (Stephens Pet.)	
SE NE SE	31.25
SW NE SE	31.25
Melton (Stephens Pet.)	
SW SW SE	23.43
SW SE SE	38.65
Samwil (Stephens Pet.)	5.46875
Wilhite (Stephens Pet.)	
N/2 SE less 10 Acres	50.0
NW SE SE	50.0
SE SE SE	50.0
SW NE SE	20.0694
NE SW SE	52.4
Oil Producing Royalties Inc.	
Melton (Stephens Pet.)	
SW SW SE	2.50
Ray Stephens, Trustee	
Griffin (Ray Stephens, Inc.)	
SE NE SE	25.0
SW NE SE	25.0
Melton (Ray Stephens, Inc.)	
SW SW SE	29.1
SW SE SE	22.7
Pierson (Stephens Pet.)	38.16667
Wilhite (Ray Stephens, Inc.)	
SW NE SE	47.4
NE SW SE	22.7
Ray Stephens, Inc. & Waldo Stephens, Joint Trustees	
Griffin (Ray Stephens, Inc.)	
SE NE SE	6.25
SW NE SE	6.25

[fol. 153]

St. Elizabeth Hospital	
Melton (Ray Stephens, Inc.)	
SW SW SE	.75
Individuals	
Cary, R. J.	
Pierson (Stephens Pet.)	3.125
Diehl, Blanche	
Wilhite (Ray Stephens, Inc.)	
NE SE SE	25.0
Everest, J. H.	
Pierson (Stephens Pet.)	6.25
Foss, J. F.	
Wilhite (Ray Stephens, Inc.)	
NE SE SE	5.0

Table XII

West Cement Medrano Pool
Non-Operating Partner's
Working Interest

Partner & Lease Corporations	Percent of Working Interest
Gamble, Sidney	
Melton (Stephens Pet.)	
SW SW SE	12.5
Kortenveutel, F.	
Melton (Stephens Pet.)	
SW SW SE	2.5
Meyers, M. T.	
Garn (Phillips)	6.25
Miller, W. L.	
Garn (Phillips)	6.25
Stephens, Waldo, Trustee	
Griffin (Ray Stephens, Inc.)	
SE NE SE	6.25
SW NE SE	6.25
Sulzberger, Dr. N.	
Melton (Stephens Pet.)	
SW SW SE	1.5
Willett, O.	
Melton (Stephens Pet.)	
SW SW SE	1.5
[fol. 154]	
Oil Payments Out of W.I.	
Plummer (Stephens Pet.)	
E/2	3.125
W/2	3,125
Pohleman (Stephens Pet.)	12.5
Walker (Stephens Pet.)	21.875
Override Royalty	
Plummer (Stephen Pet.)	
E/2	7.14286
W/2	6.25
Pohleman (Stephens Pet.)	21.875
Samwil (Stephens Pet.)	12.5
Walker (Stephens Pet.)	7.8125
Wilhite (Ray Stephens, Inc.)	
SW NE SE	12.5
NE SE SE	14.0625
NE SW SE	12.5

[fol. 155]

Table XIII

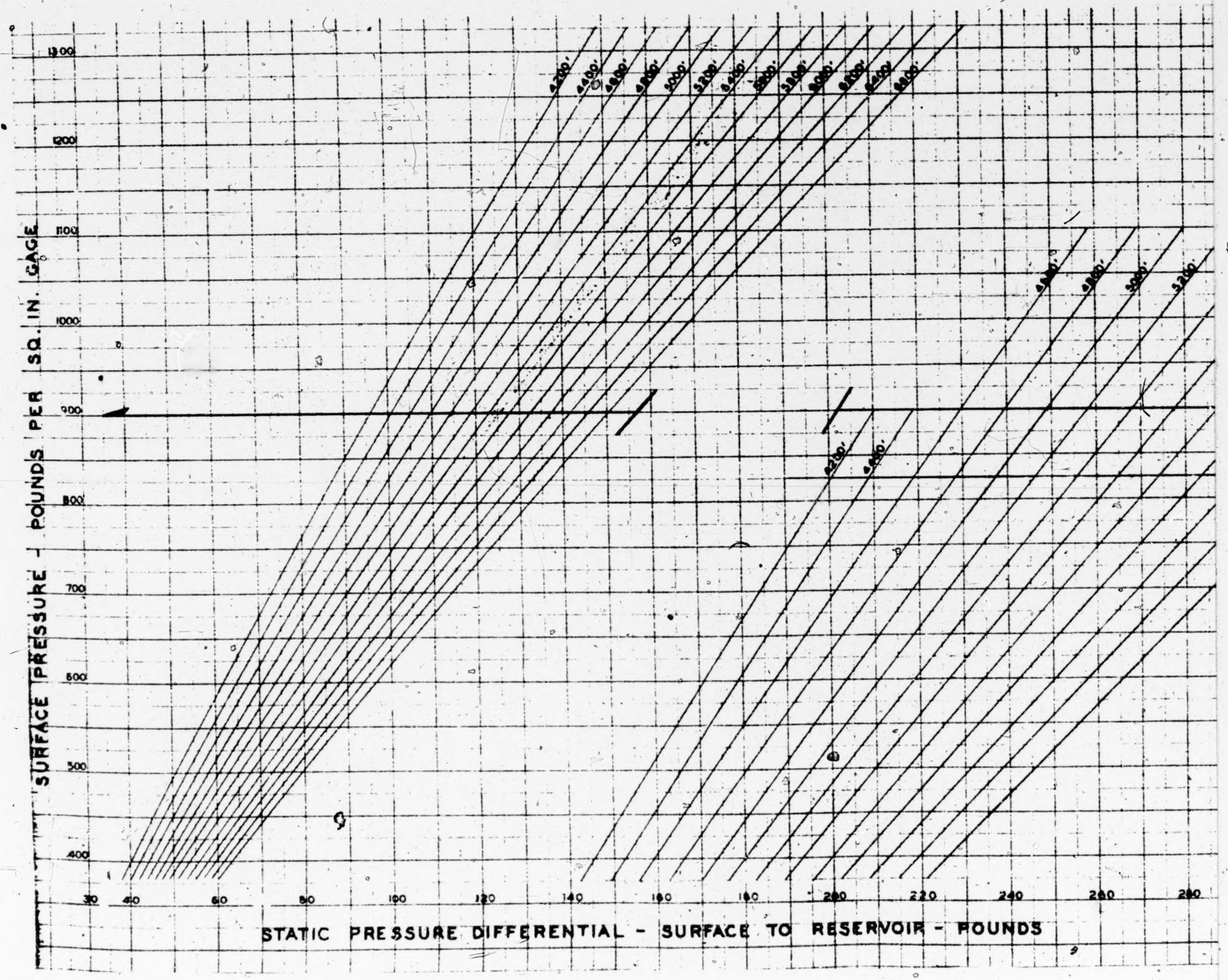
West Cement Medrano Pool
Physical GPM Tests

February 26, 1946—Atmospheric Temperature 76° F

Company	Lease	Well No.	G. P. M. Gross	G. P. M. Net at 60° F	Trap Press.	Remarks
Phillips	Hartshorn	2	.36	.36	30 lbs	Pumping on beam
Phillips	Margaret	1	.36	.36	25 lbs	Pumping on beam
Phillips	Oaks	4	.32	.32	30 lbs	Pumping on beam
Phillips	Fletcher	6	.52	.51	35 lbs	Pumping on beam
Amerada	Hartshorn	1	.24	.24	25 lbs	Pumping on beam
Amerada	Edwards	1	.20	.20	20 lbs	Flowing 3/8 Ck. 875 Csg. 280 Tbg.
And-Prichard	Walker	2-A	.20	.20	40 lbs	Pumping on beam
And-Prichard	Prentiss	3-A	.14	.14	40 lbs	Pumping on beam
Stephens	Plummer	5	.50	.48	15 lbs	Kobe Pump
*Stephens	Plummer	3	1.40	1.26	5 lbs	Pumping on beam
*Stephens	Plummer (Estimated)	3	.75	.75	20 lbs	Pumping on beam
Gulf	Sherritt	2	.08	.08	20 lbs	Flowing natural
Gulf	Sherritt	1-3-4	.12	.12	30 lbs	1-3 Flowing. 4 Kobe Pump

* The pressure on Trap was pulled down to 1/2 psi for fuel to fire lease boiler. The Trap Pressure normally operates at 20 psi. A GPM content of .75 has been estimted with 20 psi on Trap.

(Here follows 1 Photolithograph, side folio 156, Figure 13)


4200'
4400'
4600'
4800'
5000'
5200'
5400'
5600'
5800'
6000'
6200'
6400'
6600'
4200'
4400'
4600'
4800'
5000'
5200'
1300
1200
1100
1000
900
800
700
600
500
400
SURFACE PRESSURE - POUNDS PER SQ. IN. GAGE
30
40
60
80
100
120
140
160
180
200
220
240
260
280
STATIC PRESSURE DIFFERENTIAL - SURFACE TO RESERVOIR - POUNDS

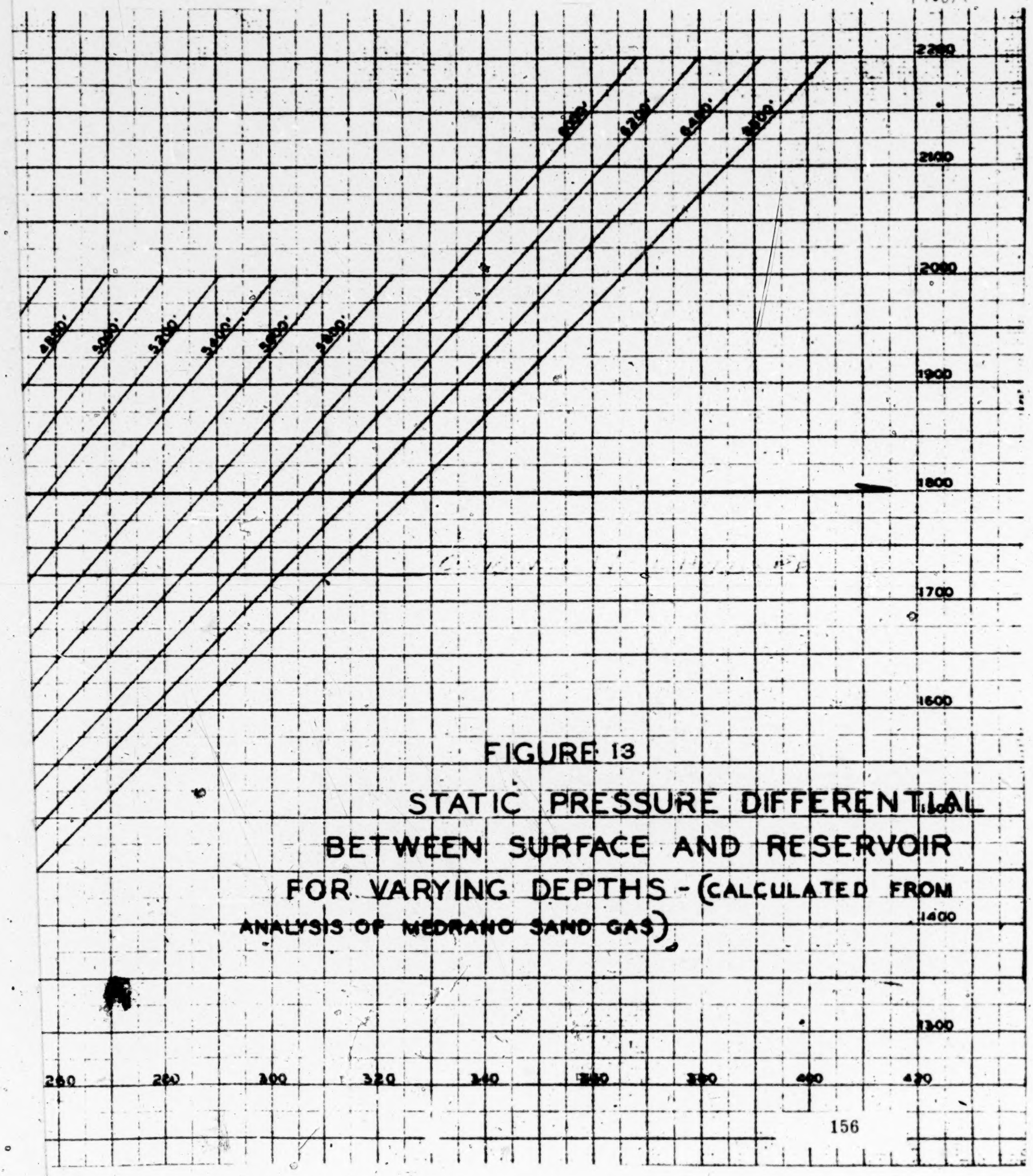


FIGURE 13

STATIC PRESSURE DIFFERENTIAL BETWEEN SURFACE AND RESERVOIR FOR VARYING DEPTHS - (CALCULATED FROM ANALYSIS OF MEDRANO SAND GAS)

[fol. 157] EXHIBIT 73

West Cement Medrano Operators Committee

Minutes of Meeting

April 10, 1947

The West Cement Medrano Operators Committee convened at the Biltmore Hotel at 10:00 A.M., April 10, 1947 with the following present:

Palmer Oil Company, Tom Palmer.
Magnolia Petroleum Company, C. H. Hudson.
Ray Stephens, Inc., Ray Stephens.
Amerada Petroleum Corp., Charley Millikan.
Caddo Oil Company, Mr. Moran.
Cities Service Oil Company, Doc Dow.
Gulf Oil Corporation, S. G. Sanderson.
Anderson-Prichard Oil Corp., Mr. Richards.
Sunray Oil Corporation, Russell Gwinner.
Phillips Petroleum Co., H. H. Kaveler.

The meeting was concerned with the following four suggestions with the action taken on each suggestion as noted:

1. The distribution of equities to separately-owned tracts should be carefully re-examined particularly in the light of objections raised at the hearing. Such re-examination should be directed particularly toward tracts:

[fol. 158]

No. 1	0.180%
No. 3	0.078%
No. 4	3.454%
No. 5	2.662%
No. 21	0.775%

on the principle that well potentials of wells on tracts 4 and 5 are low, and that tracts 1, 3, and 21 have no producing wells upon them. The thought was further expressed that the equity of tracts 66 and 70 should be re-examined for reasons that they have no producing wells upon them.

On Motion duly made and carried it was agreed that the Engineering and Geological Committees should meet to

study this suggestion and report back to the Operators Committee.

2. The tracts lying wholly in the gas-cap area should be granted an increased equity as credit for the "energy" contained in the gas-cap gas. It was suggested that a 10% increase in equity would be appropriate.

On Motion duly made and passed the Committee agreed that such an equity adjustment should not be made.

3. The allowable to gas wells in the Medrano Pool should be reduced to a reservoir volumetric equivalence to the oil allowable.

On Motion duly made and passed the Committee adopted [fol. 159] the suggestion and made a request of the Gulf Oil Corporation to file an application for hearing seeking to accomplish such a reduction in the gas well allowable.

4. The division of equity as between Palmer Oil Company and Gulf Oil Corporation (Tracts 30 and 31) be withdrawn from the plan and the equity distribution be combined and given to the tract, subject finally to whatever settlement Palmer and Gulf ultimately arrive at in respect to the division of the equity of that tract.

The Committee favored such an amendment to the Unit Application but final action was postponed until the next meeting of the Operators.

The meeting adjourned at 12:00 noon until 10:00 A.M. Thursday, April 17 when the report of the Engineering and Geological Committees would be received.

Respectfully submitted, (Signed) H. H. Kaveler,
Acting Chairman.

HHK:bc

[fol. 160] EXHIBIT 77

Plugging Record

Mail to Oklahoma Corporation Commission, Oil and Gas Conservation Department, Oklahoma City, Oklahoma.

Notice: All questions on this form must be satisfactorily answered.

Company Operating: Indian Territory Illuminating Oil Co.

Office Address: Box 1251, Bartlesville, Oklahoma.

County: Caddo, Sec. 29, Twp. 6N, Range 10W.

Location in Section: ¼ West Side Cement Field.

Farm Name: Community Darby, Well No. 1, Field:

Character of Well (whether oil, gas or dry) *Dry.*

Commenced Plugging: Jan. 11, 1938. Finished: March 1, 1938. Total Depth: 6900'.

Was permission obtained from the Corporation Commission or its agents before plugging was commenced: U.S.G.S.

Name of Conservation Officer who supervised plugging of this well: Mr. R. W. King.

Show depth and thickness of all fresh water, ~~oil and~~ gas formations.

Sand or Zone Records				Casing Records		
Formation	Content	From	To	Size	Put In	Pulled Out
Not available				13-3/8"	290'	None
				9-5/8"	4965'	1500'
				6-5/8"	6758'	4016'

Describe in detail the manner in which the well was plugged, indicating where the mud fluid was placed and the methods used in introducing it into the hole. If cement or other plugs were used, state the character of same and depth placed:

[fol. 161] Work commenced January 11 and completed March 1, 1938. Set and cemented 6⅝" OD, 24#, 10 Thd. standard seamless steel casing at 6706' with 1,100 sacks cement. Drilled cement plug to 6652'. Perforated 6⅝" casing with 48 holes from 6560' to 6650'. Result: Approximately 6 bbls. of water per hour, no show of oil or gas. Set Lane Wells bridging plug at 6480'. Plug would not hold.

Ran second Lane-Wells brid-ing plug and set at 6435'. Dumped 6 sacks of cement to 6407' and swabbed to cement plug. *Tested dry.*

Perforated 6 5/9" casing from 6055' to 6100' with 89 holes. Result: approximately 3.6 bbls. of water per hr., trace of dead oil, no gas showing. Set a Lane-Wells brid-ing plug at 5800' and dumped 6 sacks of cement to 5765'. *Tested dry.*

Perforated 6⅝" casing from 5470' to 5498', with 13 holes. Result: 49 bbls. of water per hr., no oil or gas showing. Set Lane-Wells bridging plug at 5450' and dumped 6 sacks of cement to 5410'. *Tested dry.*

Perforated 6⅝" casing from 5330' to 5346' with 10 holes. Results: 54 bbls. water per hr., no show of oil or gas. Set Lane-Wells bridging plug at 5300' and dumped 6 sacks of cement to 5252'. *Tested dry.*

Perforated 6⅝" casing from 5040' to 5045' with 5 holes. Results: 63.6 bbls. of water per hr., no oil or gas showing. Set plug at 4900', filled hole with rock to 4890' and dumped 6 sacks of cement to 4850'. Shot off and pulled 4016' of 6⅝" casing. Set plug at 4002' and dumped 6 sacks of cement to 3990'.

[fol. 162] Perforated 9⅝" from 3480' to 3507' with 19 holes. Results: 15.6 bbls. of water per hr., *with no show of oil or gas.* Set a wood plug at 3517' and dumped rock to 3508' and cement to 3459'. Shot off and pulled 1500' of 9⅝" casing, keeping the hole filled with mud while pulling. Filled hole with mud and capped with 3 sacks of cement.

W. R. King, Duncan, Oklahoma, Conservation Officer, supervised plugging.

The Law requires that adjacent lease, royalty and land-owners be notified; give their names with their addresses below:

No offset operators.

Received Mar. 16, 1938. Corporation Commission Conservation Dept.

Remarks: Why plugged? *Dry hole.*

Correspondence regarding this well should be addressed to:

Indian Territory Illuminating Oil Company.

Box #1251—Bartlesville, Oklahoma.

I, the undersigned, being first duly sworn upon oath, state that this well record is true, correct and complete according to the records of this office and to the best of my knowledge and belief.

(Signed) J. L. Turner, Chief Clerk, Name and title of representative of company, Prod. & Eng. Div'ns.

Subscribed and sworn to before me this the 14th day of March, 1938. My Commission expires: July 11, 1939. (Signed) Emmet Ely, Notary Public. (Seal.)

[fol. 163] EXHIBIT 78

Plugging Record

Mail to Oklahoma Corporation Commission, Oil and Gas Conservation Department, Oklahoma City, Oklahoma.

Notice: All questions on this form must be satisfactorily answered.

Company operating: Ray Stephens, Incorporated.

Office Address: 1716 First National Building, Okla. City, Okla.

County: Caddo, Sec. 28, Twp. 6 North, Range 10 West.

Location in Section: SW¼ SE¼ NW¼.

Farm Name: Brown, Well No. 1, Field: Cement.

Character of Well (whether oil, gas or dry) Dry.

Commenced Plugging: Aug. 7, 1940. Finished: August 8th, 1940.

Total Depth: 5951.

Was permission obtained from the Corporation Commission or its agents before plugging was commenced: Yes.

Name of Conservation Officer who was supervising plugging of this well: Fencher, Duncan, Okla.

Name of producing sand: None.

Casing Records

Size	Put In	Pulled Out
16" OD	297' 8"	None
9-5/8"	3842	160'

Describe in detail the manner in which the well was plugged, indicating where the mud fluid was placed and

the methods used in introducing it into the hole. If cement or other plugs were used, state the character of same and depth placed:

[fol. 164] From bottom to 3842' heavy mud pumped in hole. 9⅝" cemented with 700 sacks cement. Inasmuch as recovery was not below the bottom of the surface pipe, the hole was filled full of heavy mud and cement plug run on top of 16' and welded shut. Does the above conform strictly to the oil and gas regulations: Yes.

Received Oct. 1, 1940. Conservation Dept. Corporation Commission.

Remarks: Why Plugged? Dry. If abandoned oil or gas well, state amount and date of last production: None.

Correspondence regarding this well should be addressed to: Ray Stephens, Incorporated, 1716 First National Building, Oklahoma City, Oklahoma.

I, the undersigned, being first duly sworn upon oath, state that this well record is true, correct and complete according to the records of this office and to the best of my knowledge and belief.

Signed: C. W. Stephens, Supt., Name & Title of Representative of Company.

Subscribed and sworn to before me this 30th day of September, 1940. My Commission expires: August 11, 1942. Signed: Clariece Anderson, Notary Public. (Seal.)

[fol. 165] EXHIBIT 92

March 31, 1944.

In re: Application for Exception to P.A.O. No. 11 West Cement Medrano Oil Pool.

Petroleum Administration for War, District #2, Blum Building, Chicago 5, Illinois.

Attention of Mr. C. C. Brown, Director of Production

Gentlemen:

In accordance with paragraph (1) of Petroleum Administrative Order No. 11, as amended, a P.A.W. Form 3 appli-

cation is hereby submitted, requesting an exception to said order, to permit additional development in the Medrano Oil Sand of the West Cement Field, Caddo County, Oklahoma.

1. Name and address of applicant: Phillips Petroleum Company, Bartlesville, Oklahoma.

2. Location of proposed operations: This application relates to the Medrano sand oil reservoir of the West Cement Field, Caddo County, Oklahoma. The limits of Medrano Sand oil production are now reasonably well defined in most of the field except in that area to the southeast of the NW/4 Section 1-5N-10W. The data available from present development does not establish the stratigraphy of the southeast end of the reservoir. Attached hereto and [fol. 166] marked Exhibit A, is a map which shows the area covered by this application outlined in red.

3. Nature and description of proposed operations. Applicant proposes that the present drilling restrictions applicable to the West Cement Medrano Sand Oil reservoir, under the exception to P.A.O. No. 11, Case No. 4803, be modified so as to allow a 20 acre density flexible plan of development. With this objective in mind, it is requested that the present pool-wide order be revised sufficiently to permit the drilling of a maximum of two oil wells on each quarter-quarter section (40 acres), and with only the following limitations being placed on the location of the wells:

> (a) Each such well to be at least 330′ from every lease line, property line, or subdivision line which separates unconsolidated property interests and from every boundary of the quarter-quarter section upon which such well is located, and (b) Each such well be drilled at least 660′ from every other drilling or producible Medrano Sand oil well.

This plan of spacing will naturally give the operator much latitude in the location of wells for the establishment of the most effective drainage pattern on each lease. How- [fol. 167] ever, it is felt that even with these liberal restrictions, the average operator will probably confine the actual location of his wells to the approximate centers of the ten acre quarters contained in each 40-acre unit, as illustrated on Exhibit A.

4. Point of exception: The present exception under P.A.O.-11, case No. 4803, dated August 19, 1943, provided for the drilling of only one well to each quarter-quarter section in the Medrano Sand oil reservoir with three optional locations permitted as follows:

(a) Within 100′ of the center of the NE 10 acres, or

(b) Within 100′ of the center of the SW 10 acres, or

(c) Within 150′ of the center of a quarter-quarter section.

A further restriction in the present order contrary to the proposal, as set out in 3 above, is the requirement that each well must be at least 900′ from every other drilling or producible Medrano Sand oil well spudded subsequent to the effective date of the order.

5. Lease and Reservoir data: On August 4, 1943, a group of interested operators, including applicant, filed a joint application (case No. 4803) with the Petroleum Administration for War. At that time all available geological and [fol. 168] reservoir information was presented. Since then, however, much additional information has been revealed by subsequent drilling. Such supplemental data is now presented on Exhibits A, B, C, and D.

From Exhibit A it should be noted that the interpretation of the general geological features have not been changed greatly except for the now proven existence of cross-faults, of which there is evidence of at least four. These cross-faults are known to exist both from pressure and stratigraphic data. Such faults have various displacements and the one traversing the S/2 of Section 35-6N-10W is known to have a displacement of some 500 to 700 feet. The two wells drilled in the fault zone missed the Medrano Sand entirely. The strike and displacement of the other three faults is not so well established but the interpretation here presented readily accounts for the difference in reservoir pressures.

The portion of the pool covered by this application is divided into four fault-segments, each of which has varying characteristics and varying degrees of exploitation. To facilitate presentation of data, these fault-segments have

been designated as segments A, B, C, and D, and the limits of each shown on Exhibit A.

The gas/oil contact is now considered to be approximately [fol. 169] minus 4000′ while the oil/water contact has been established in the Amerada #1 Hartshorn (NE of Section 2-5N-10W) at 4660-70 feet and the Gulf #4 Sherritt (NE of Section 33-6N-10W) at 4706′. From this evidence, Exhibit A shows the boundary lines of the anticipated oil productive area and also a representative cross-section illustrating the relative position of gas, oil and water. The two inside contours represents the extent of the reservoir that is completely saturated with oil from the top to the base of the Medrano Sand section. It should be noted that the fully saturated oil band only averages about one fourth mile in width and in this type reservoir it is obvious that wells must be located in this relatively narrow oil column for the most efficient operation. In Section 34-6N-10W there is nearly 200′ of saturated sand, but the sand thins out both to the east and west of this point. At present, there is no evidence of an effective water drive.

At present there are 20 completed producers and 5 drilling wells in the Medrano Oil Pool. In the four segments covered by this application it is estimated that 984 acres are proven for oil production and Exhibit E, attached, shows an estimate of oil reserves based on a flexible 20-acre plan of development. It is the applicant's firm belief that [fol. 170] ultimate recoveries will be considerably smaller than the amount set out on Exhibit E if present restrictions remain in effect.

6. Supporting data: The reasons for 20-acre well densities and greater flexibility in the pattern of development of this reservoir were presented in the original application, case No. 4803 but for added emphasis, the following points are stressed:

(a) That estimated average recoveries of 29,100 barrels per acre (Exhibit E) amply justifies 20-acre development.

(b) That the Medrano Sand Oil Zone in the West Cement Field is very unusual and different structurally from most other pools in that it is a narrow oil column

around the edge of a large gas cap on a steep dipping formation.

(c) That it is well recognized that on such a structure, it is not only desirable but is also necessary to efficient and economical development that great flexibility, in preference to a uniform surface pattern of spacing, will result in more proper development and in better drainage.

(d) That the peculiarity of the structure in the Medrano Sand Oil Zone presents a problem quite similar to the Piercement-Dome structures of the Gulf Coast Region where the P.A.W. has properly seen fit to grant much greater flexibility than is afforded [fol. 171] under the present rules in the Medrano Sand Oil Zone. Like flexibility in the location of wells in this pool will doubtless eliminate the drilling of many dry or non-commercial wells and will certainly result in a greater ultimate recovery of oil.

(e) That the program here suggested and recommended will, in the opinion of the applicant, definitely insure the most effective utilization of critical materials and will result in a greater amount of much needed crude oil being produced in the immediate future, and will also promote a greater ultimate recovery from the reservoir.

A copy of this application is being mailed to each interested operator with a request that they individually express to P.A.W. their position on this application.

It is submitted that the proposed development is necessary and appropriate in the public interest and to promote the war effort. Applicant, therefore, respectfully requests authorization to use material required for developing the West Cement Medrano Oil Pool as outlined in Section 3 above.

Certification

The undersigned hereby certifies to the Petroleum Administrator for War that:

(a) The foregoing application has been executed on behalf of and by authority of the above named applicants; [fol. 172] (b) The facts stated in the foregoing applica-

tion are, to the best of my knowledge and belief, true and correct;

(e) If the authorization hereby applied for is granted, use of material existing in stock or obtained by means of any applicable allotment number or preference rating will be made solely in accordance with the terms of the authorization which has been granted, and with the provisions of Petroleum Administrative Order No. 11, as amended from time to time.

Yours very truly, (Signed) C. P. Dimit, Vice President in Charge of Production.

(Here follows 2 photolithographs, folios 173, 174)

Medrano - West Cement
monthly Royalty interest

		oil				
amerada	April	$ 2.00				
15 Beemer	2,816	$ 5632.	$ 704.00	1.12313		
49 Eduarde and H.B.	6,168	12,336.	1,542.	3.54720	1,388.	
58 Pickard	—00	—00	—00	1.09412	$ 422.	
64 Prentice "A"	11,615	23,230.	2,904.	2.58742	1,009.	
65 " "B"	—00	00	00	.52078	203.	
56 Walker "A"	4,646	9,292.	1,162.	1.55533	607.	
Gulf						
14-Merritt	20,394	40,788.	5,099.	13.11109	5,113.	
magnolia						
47 L. Eduarde	5,098	10,196.	1,275.	2.36562	923.	
48 LL " "	706	1,412.	177.	1.86102	726.	
Phillips						
18 Fletcher	9,188	18,376.	2,297.	5.37390	2,096.	
32 Margaret	5,953	11,906.	1,488.	3.87549	1,511.	
26 Oake	17,495	34,990.	4,374.	11.21393	4,373.	
Stephens						
41 Pierson	—	—	—	1.47267	$ 574.	
6 Poldman	2,976	5,952.	744.	1.96799	768.	
19 Plummer "B"	5,958	11,916	1,489.	4.09025	1,595.	
20 Plummer "A-6"	12,056	24,112	3,014.	6.86655	2,678.	
57 Walker	5040	10,080	1,260.	1.18668	463.	
		gas				
		$ .08				
and. H.R.	April		1/8			
62 Davis	63,947	$ 3,197.	$ 400.	.46951	$ 160.	
magnolia						
52 Lindsay	28,196	1,410.	176.	.31403	122.	
46 Medrano	41,002	2,050.	256.	.59865	238.	
45 Niles	30,489	1,524.	191.	.36728	143.	
38-Samsa	40,569	2,028.	254.	.57283	223.	
Phillips						
28 Farrell	00	00	00.	.18958	74.	
27 Sam A"	2,145	1,057	132.	.02277	9.	
Stephens						
16 Farrell	56,113	2,806.	351.	.38231	130.	
34 Melton	00	00.	00	.02614	10.	

14721

						Royalty int.
Stephens	April	$2.00	1/8	unit interest		
3 - Beaun	00	00	00	.08253		$ 32. ✓
35,36,17 Melton	00	00	00	.03102		12.
Gulf						
33 - Holland	00	00	00	.06049		$ 22. ✓
and H.B.						
40 Hays	00	00	00	.58977		$ 230. ✓
67,68 69,70 McClaren	00	00	00	.23336		91. ✓
Mag						
44 Rickard	00	00	00	.00422		$ 2. ✓
51 Caddo-Lane	00	00	00	.00495		2. ✓
53 Davis	00	00	00	.34024		133. ✓
60 Gingrich	00	00	00	.02892		11. ✓
amerada						
50 Wood	00	00	00	.18412		72. 9/360
Carter						
54 Davis	00	00	00	.06642		$ 26. ✓
Rocketool						
55 Davis	00	00	00	.03249		13. ✓
Standlind						
61 Gingrich	00	00	00	.00133		1. ✓
Loyd Noble						
63 Davis	00	00	00	.00073		0. ✓
Phillips						
71 Gerr "B"	00	00	00	.04096		16. ✓

[fol. 175]

EXHIBIT 117

Tract No.					
3	Kit C. Farwell—35/80				0.0312
14	Mabel E. McKirk	Owns 1/8th (20 acres)—1/8			1.639
14	Mrs. Jane (E. W.) Jones	Owns 16-2/3 ac. or 5/48 min. int.			1.365
15	Amelia Beemer				0.835
16-17-72 & 72	Kit C. Farwell, 130/320	No. 16 0.080			0.0325
		No. 17 0.113			0.0460
		No. 72 0.444			0.0585
19 & 20	Florence May Plummer	1/5)			
	Hazel A. Plummer	1/5)			
	Harold Edwin Plummer	1/5)		No. 19	4.078
	(Virgie M. Updergrove &	)		No. 20	6.848
	Thomas Gordon Updergrove)	1/5)			
	Thomas O. Plummer	1/5)			
26	I. O. Oaks 3/4				8.388
28	Kit C. Farwell & (Chas. T. Williand 5 acres) .0019 x .533x .001				.001
32 & 33	Regina Schlitt				
	James A. Holland			No. 32 =	3.458
	Ben P. Holland				
	(Ben P. Butler)	No. 33 = 0.057x			—
	(Thomas J. Butler)				
34-34-34-34	Nettie Melton 11/72 mineral int.	— .0026			0.004
35-36-37	Mrs. Fannie McDowell 11/72 Min. Int.			No. 35	0.00015
				No. 36	0.00183
				No. 37	0.00260
38	J. S. Smith (J. S. Smith)	28/160ths.			0.1380
	J. P. McKenna	1/16th			0.0363
40	Eva I. Pierson	3/9ths int.)			
	Ernest S. Pierson	1/9th int.)			
	Eva J. Mead	1/9th int.)			
	Ella Pierson Price	1/9th int.)	1/8		0.588
	Clarence M. Pierson	1/9th int.)			
	Richard E. Pierson	1/9th int.)			
	Minnie E. Pierson	1/9th int.)			
41	Same interest as above. Under No. 40	)			
	Same names, etc.	)	1/8		1.476
44	Louis L. Edwards, 13.1/3 acres or	40/240ths min. int.			0.00060
	M. M. Davis, 9-1/3 acres, or	28/240ths min. int.			0.00046
	T. G. Gann, 2-1/2 acres, or	5/160ths min. int.			0.000125
45	Grace E. Niles	50/480ths min. int.			0.0387
	J. D. Davis	10/160ths min. int.			0.0232
	L. E. Davis	10/160ths min. int.			0.0232
	M. M. Davis	10/160ths min. int.			0.0232
46	Oza Medrano, 26-2/3 acres or	80/480ths min int.)			
	Oza Medrano, Guardian,	)	160/480 =		0.203
	of B. A. Medrano. 26-2/3 acres, or 80/480ths	" ")			
47	Lewis L. Edwards	2.379			
48	Lewis L. Edwards	1/2 minerals (.702)			0.918
49	Lewis L. Edwards	8.888 or 2/9)			
	Jasper Edwards	4.444 ac. or 1/9 Int.)			
	Ted R. Edwards	4.444 ac. or 1/9 Int.)			
	Josephine Welch	4.444 ac. or 1/9 Int.)			3.540
	Clinton Edwards	4.444 ac. or 1/9 Int.)			
	Jessie M. Mullinax	4.444 ac. or 1/9 Int.)			
	Opal Coon	4.444 ac. or 1/9 Int.)			
	Frank Edwards	1/9 Int.)			

EXHIBIT 117—Continued

[fol. 176]

Tract No.				
51	Estate of Ed. M. Rowe, by Wayne Rowe, Admr.	all minerals.		0.005
52	Gracie Lindsey	63/1280 min. int.		0.0157
	O. Lindsey	97/1280 min. int.		0.0242
	C. C. Dixon, 2 acres, or	1/80th min. int.		0.00399
54	L. A. & Mare M. Davis	All minerals,		0.066
55	L. A. Davis & Marie M. Davis	All minerals except a limited royalty interest of 3/4 of 1/8 of oil produced		0.030
60-61-62-63	Mary A. Faris	2/16ths int. in each tract—	(No. 60	0.0036
			(61	0.00025
			(22	0.05025
			(63	0.000125
62-63	L. N. Davis	3/4 of all minerals	No. 62	0.3015
			63	0.00075
64 & 65	Winifred M. Prentice, now Graney,	1/4 of all minerals)	" 64	2.741
	Eugene L. Prentice	1/4 of all minerals)		
	Maxine Ruth Prentice; now Tonn,	1/4 of all minerals)		
	John C. Prentice	1/4 of all minerals)	" 65	0.408
27-71	Elizabeth Paine	1/16 of all minerals	" (27	0.0014
			" (71	0.00256
67-68-69-70	Maurice McClaran	19/16ths)		
	Dorothy McClaran, by Maurice McClaran, Attorney in fact—	19/160ths)	Min.	
	George A. McClaran, by Maurice McClaran, Attorney in fact—	19/160ths)		
	Max E. McClaran, by Maurice McClaran, Attorney in fact—	19/160ths)		
	Ida B. Rivers, Individually	19/160ths		
58	J. F. Ball	5/48ths of minerals		0.115
57	Clyde & Maude Kahle	5/128 O.R.R.I.		
	Bob While Oil Co.	5/128 O.R.R.I.		
57	T. B. Walker	Owns 1/2 minerals		0.559
56	T. B. Walker	Owns 1/2 all minerals above 3500 ft. depth & 1/2 minerals below 3500 ft. (all Medrano sand)		0.789
55	Clyde Kahle	Owns 1/8 of 7/8 O.R.R.I.		
66	C. C. Dixon	Owns 5/160ths mineral interest		0.00003
67	McClaren Interest	76/160 x 0.066 =	0.0314	
	Ida Rivers	19/160 x 0.666 =	0.00784	
68	McClaren Int.	76/160 x 0.014 =	0.00665	
	Ida Rivers	19/160 x 0.014 =	0.00166	
69	McClaren Int.	76/160 x 0.129 =	0.0613	
	Ida Rivers	19/160 x 0.129 =	0.0153	
70	McClaren Int.	76/160 x 0.026 =	0.0124	
	Ida Rivers	19/160 x 0.26 =	0.0031	
				39.05%

[fol. 177] EXHIBIT 122

Affidavit of Publication

STATE OF OKLAHOMA,
Oklahoma County, ss:

Arta Simpson, of lawful age, being duly sworn on oath, deposes and says: That she is the Principal Clerk of The Daily Law Journal-Record, a newspaper of general circulation in the State of Oklahoma and printed at Oklahoma City, Oklahoma. That the attached notice was published in all regular editions of said newspaper on the following dates: July 19, 1947.

(Signed) Arta Simpson.

Subscribed and sworn to before me this 19th day of July, 1947. (Signed) Kathryn Altmiller, Notary Public. My Commission expires January 18, 1950. (Seal.)

Publisher's Fee: $7.70.

[fol. 178] (Attached Publication)

(34503)

NOTICE

C. D. No. 1308

Before the Corporation Commission of the State of Oklahoma

In the Matter of the Petition for the Creation of the WEST CEMENT MEDRANO UNIT Having for Its Purpose the Unitized Management, Operation and Further Development of the WEST CEMENT MEDRANO Common Source of Supply of Oil and Gas in Caddo County, Oklahoma; the Defining of the Unit Area Thereof and the Prescribing of the Plan of Unitization Applicable to Such Unit and Unit Area

The State of Oklahoma to all persons, firms, corporations, partnerships, trusts, trustees, guardians, executors, ad-

ministrators, fiduciaries of every kind, the State of Oklahoma and all agencies and subdivisions thereof and all other beings or entities owning oil and gas rights or otherwise interested in the common source of supply of oil and gas known as the West Cement Medrano Pool underlying the hereinafter described lands located in Caddo County, Oklahoma, or in the production, handling or marketing of the oil and gas that may be located therein or produced therefrom, or having the right to share and participate, either directly or indirectly, in the benefits of such production:

Notice is hereby given that Amerada Petroleum Corporation, et al., Lessees of record of more than 51% of the area of the aforesaid common source of supply of oil and gas, did on the 18th day of July, 1947, file with the Corporation Commission of the State of Oklahoma an amendment to the original petition filed in said cause by amending the [fol. 179] proposed plan of unitization attached thereto in the particulars set forth in said amendment.

That said amendment has been set for hearing before the Corporation Commission at its court room in the State Capitol Office Building at Oklahoma City, Oklahoma, at 10:00 o'clock A. M. on the 29th day of July, 1947.

That all those to whom this notice is addressed, and any and all other persons who claim that they will be affected by the amendment, or the petition as amended, shall have the right to be present and participate at said hearing, and shall be granted the opportunity at said time and place to offer evidence and be heard in support of, or in opposition to, the amendment or petition as amended, and in regard to any other matter or thing pertaining to said amendment or petition as amended.

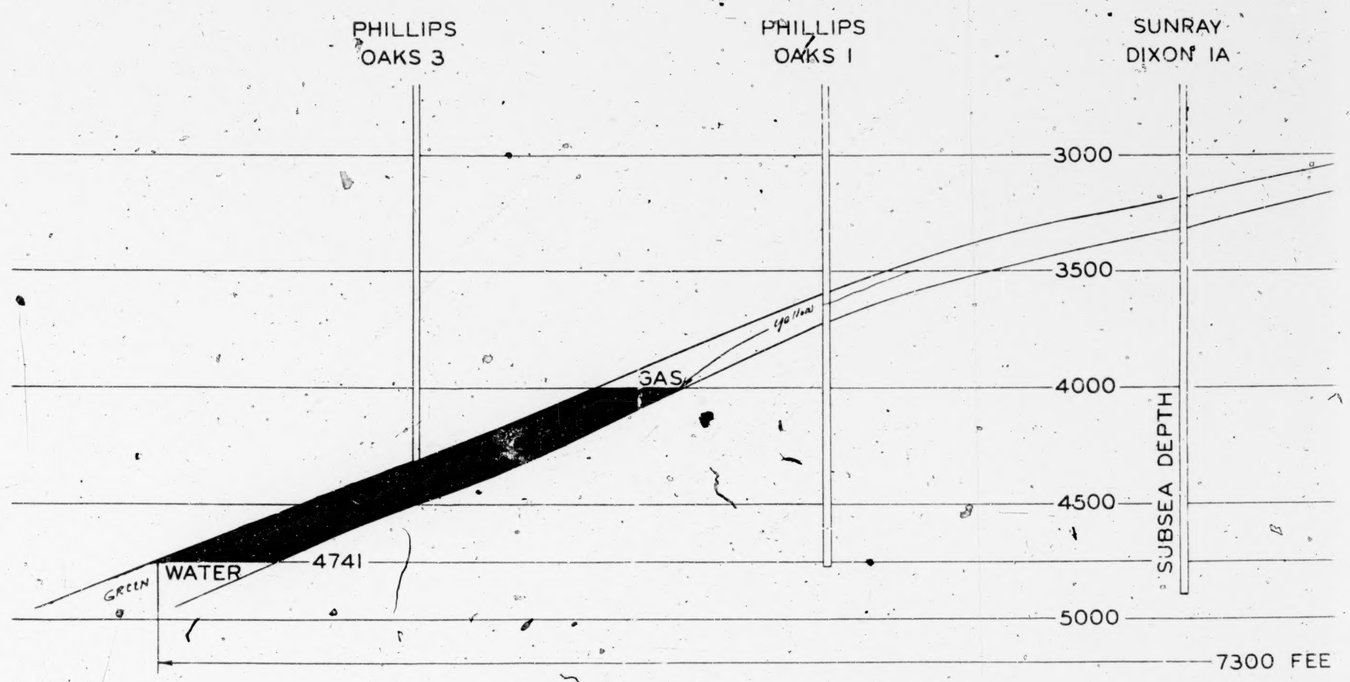
Corporation Commission of Oklahoma, by Reford Bond, Chairman; Ray C. Jones, Commissioner. (Seal.)

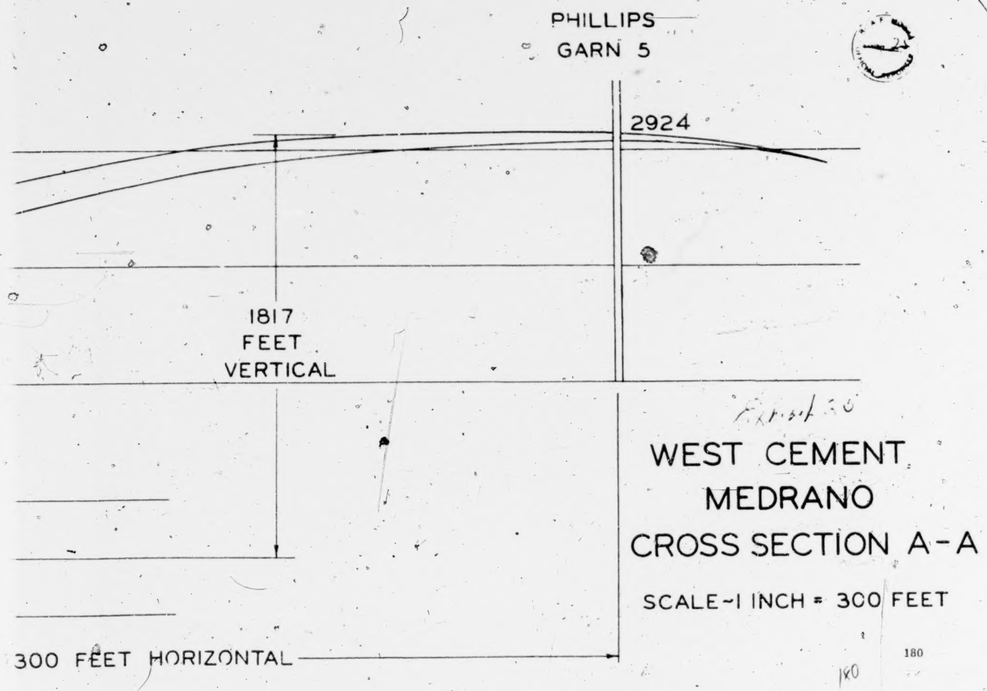
Tom McMurray, Secretary.

(7-19-47.)

(Here follows 1 photo., folio 180)

EXHIBIT 25





WEST CEMENT
MEDRANO
CROSS SECTION A-A

SCALE-1 INCH = 300 FEET

[fol. 181] EXHIBIT 34

This Agreement made in duplicate this 6th day of September, 1938, between Gulf Oil Corporation, a Pennsylvania corporation, with offices at Tulsa, Oklahoma, first party, hereinafter called "Gulf", and The Palmer Oil Corporation, of Wichita, Kansas, second party, hereinafter called "Palmer",

Witnesseth, that

Whereas, Gulf is the owner and holder of an oil and gas mining lease dated February 12, 1936, executed by Paul Sterba and Gertrude K. Sterba, his wife, and Helen Catherine Jackson, nee Sterba, and Clifford Jackson, her husband, as lessors, to Chris Pearson, as lessee, covering the

> Southwest Quarter (SW¼) of Section 35, Township 6 North, Range 10 West, Caddo County, Oklahoma,

and filed for record in the office of the County Clerk of Caddo County, Oklahoma, February 26, 1936 at 11:00 o'clock A. M., and recorded in book 75 at page 316; and,

Whereas, Gulf has agreed to assign the lease without covenants of warranty to Palmer and the oil, gas and other minerals above the depth of 6000 feet, retaining an overriding royalty, in consideration of the covenants and promises and agreements hereinafter contained:

Now, therefore, in consideration of the premises and the mutual covenants and agreements hereinafter set out, it is agreed as follows, to-wit:

1. Palmer agrees within thirty (30) days from the date of the execution of this contract to commence drilling operations for oil and gas, or either of them, in the center of the

> Northeast Quarter (NE¼) of the Northeast Quarter (NE¼) of the Southwest Quarter (SW¼) of Section 35, Township 6 North, Range 10 West, Caddo County, Oklahoma,

and with diligence and dispatch and at its sole cost and expense drill said well to a total depth of six thousand (6000) feet unless oil and gas, or either of them, or igneous rock or other impenetrable formation is encountered at a lesser depth.

2. During drilling operations, Palmer shall at all times afford Gulf free access to said well and the records thereof, and once each week shall forward to W. R. Thawley, P. O. Box 661, Tulsa, Oklahoma, written report showing all formations encountered, including the depth thereof, and [fol. 182] upon request and in receptacles furnished by Gulf, send to W. R. Thawley samples or cuttings of formations and waters penetrated. In event said well shall be completed to a dry hole, Palmer shall forthwith measure the depth of said well by running a steel measuring line therein, and shall notify Gulf of its intention to measure said well in time for Gulf to have a representative at the well to witness the measurement thereof. Upon completion of said well Palmer shall furnish Gulf with complete certified log thereof and samples and cuttings of formations saved in the course of drilling, and such other information disclosed by said drilling as may be demanded by Gulf.

3. In event Palmer shall fail to commence and complete the aforesaid well, or cease drilling operations on the same for a period of more than ten (10) days, unless such delay is due to the Act of God or the public enemy, then all rights of Palmer under this agreement shall forthwith terminate.

4. If the aforesaid well shall be drilled and shall be found dry, Palmer shall promptly plug the same at its sole cost and expense and retain all salvage from said well as his own, said work to be performed in compliance with the laws of the State of Oklahoma and the Rules and Regulations of any regulatory body having jurisdiction in the State of Oklahoma.

5. Before plugging any well and abandoning the same, Palmer shall give notice of such intention to Gulf at least ten (10) days before the date on which said well shall be plugged and abandoned, during which ten (10) days Gulf shall have the right, but shall not be obligated so to do, to take over said hole by paying Palmer the cost of drilling such hole, plus the cost of the equipment in the well as reflected by the books and records of Palmer, and thereupon such hole and equipment therein shall become the property of Gulf, it being understood and agreed that in event Gulf takes over the hole, Palmer shall deliver the hole to Gulf free, clear and discharged of all encumbrances, and in event

there are any debts or claims unpaid, Gulf shall have the power and authority to pay such indebtedness out of the purchase price of such hole, accounting to Palmer for the balance due, if any.

6. Palmer agrees to comply with the Workmen's Compensation Laws of the State of Oklahoma and furnish satisfactory evidence of such compliance, and further agrees to save harmless and indemnify Gulf from and on account of all liabilities of every kind or character either to person or [fol. 183] property incurred during the performance of this agreement.

7. Gulf further promises and agrees, upon full compliance with all the covenants, conditions and agreements herein contained, and completion of the test well to the depth of six thousand (6000) feet, unless oil and gas, or either of them, are found in commercial quantities at a lesser depth, or igneous rock or other impenetrable formation is encountered at a lesser depth, and upon satisfactory proof that all debts have been paid, it will assign the oil and gas mining lease hereinabove described, without covenants of warranty, insofar as it covers the oil, gas and other minerals above the depth of six thousand (6000) feet, retaining and reserving the oil and gas and other minerals below the depth of six thousand (6000) feet, and also retaining an overriding royalty of 1/16th of the 7/8ths working interest in the oil produced when the total daily production from the leased premises is fifty (50) barrels or less per day, and 1/8th of the 7/8ths working interest in the oil produced, saved and marketed from the premises when the total daily gross oil produced from the leased premises exceeds fifty (50) barrels per day; also reserving and retaining an overriding royalty of 1/8th of the 7/8ths working interest in the gas and casinghead gas produced, saved and marketed or used off the premises, which overriding royalty is to be paid in the following manner, to-wit:

Palmer agrees to run the oil produced, saved and marketed from the premises to the pipe line or pipe lines to which it may connect the well or wells under division orders placing to the credit of the Gulf 1/16th of the 7/8ths working interest in the oil produced, saved and marketed from the premises, when the total gross oil produced from the leased premises is fifty (50) barrels or less per day, and

1/8th of the 7/8ths working interest in the oil produced, saved and marketed from the premises during the time the total gross oil produced, saved and marketed from the premises exceeds fifty (50) barrels per day, and to pay Gulf 1/8th of the proceeds of the 7/8ths working interest in the gas and casinghead gas produced, saved and marketed from the premises, payment to be made on the 20th day of each month for the gas and casinghead gas produced and sold from the premises or used off the premises during the preceding month. The overriding royalty hereinabove shall be in addition to the royalty provided in the lease and payable to the lessor or their assigns.

[fol. 184] The daily production shall be ascertained and determined, for the purposes of this contract, by taking the gross pipe line runs for the month and dividing into the same the number of days in such month, and the quotient shall be considered the total daily production from the leased premises for such month. If the test well comes into production after the first of any month, the daily production for such month shall be ascertained and determined by taking the pipe line runs for the number of days the oil is run for such month and dividing into the same the number of such days, and the quotient shall be the daily production for such month for such portion of the month.

8. Palmer agrees to furnish Gulf copies of daily run tickets, to be mailed to Gulf Oil Corporation, P. O. Box 661, Tulsa, Oklahoma, once each week, enclosing the daily run tickets for the preceding weeks, and, at the close of the month and as soon as obtainable, production tickets for the entire month. Palmer further agrees to furnish Gulf copies of all tank tables.

9. Palmer promises and agrees to produce and market each month the total allowable production for such month and if for any reason Palmer fails, neglects or refuses to produce and market such allowable, Palmer shall promptly advise Gulf in writing, furnishing in detail the reasons for not producing and running the allowable for such month.

10. After the execution of the foregoing assignment, Palmer agrees to perform all of the covenants, express and implied, in the lease insofar as oil and gas development or offsets of oil and gas wells are concerned, and to save

harmless Gulf from any claims on the part of the lessors or any of them, or royalty owners on account of any alleged failure to perform any such obligation, and further agrees to defend any suits that may be filed against Gulf on account of such failure, and to pay any judgment that may be obtained against Gulf, and in event Palmer shall fail to offset any paying oil or gas well, Gulf shall have the right and option, but shall not be obligated so to do, it being purely optional with it, to drill such well if Palmer shall fail to commence actual operations on the land for the drilling of such well or wells within forty-five (45) days after demand in writing by Gulf to Palmer, and shall thereafter diligently continue the drilling of such well, and in such case, if Gulf drills such well or wells, it shall have the sole right in such leases as to each well drilled, including a plot [fol. 185] of ground in square form containing ten (10) acres, the center of which shall be the well.

11. It is further agreed that if at any time Palmer desires to abandon any oil or gas well drilled by it on the leased premises, or desires to abandon the entire leased premises, Gulf shall be given (30) days' notice of such intention and during such 30 days Gulf shall have the option to take over such well or wells or Palmer's interest in the entire leased premises by paying Palmer the salvage value of the equipment in the well or wells, and/or the leased premises and, upon Gulf exercising such option, Palmer shall assign to Gulf its interest in the leased premises as to the well or wells taken over or the entire leased premises, as the case may be, free, clear and discharged of all liens or encumbrances of whatsoever kind or nature. In event Gulf does not elect to take over any well or wells Palmer has drilled on the leased premises and/or the entire leased premises, Gulf shall be entitled, if it so demands, to a re-assignment of the lease free, clear and discharged of all liens and encumbrances and Palmer shall be entitles to the salvage value of the equipment placed thereon; Provided, in event Gulf shall take over a well or wells as herein provided and not the entire leased premises, the re-assignment shall extend only to a tract of land surrounding each well containing ten (10) acres in a square form, the center of which shall be the well taken over.

12. It is further agreed between the parties that Palmer will at all times keep said lease free, clear and discharged of all liens, charges or encumbrances of whatsoever kind or character and protect and save harmless and indemnify Gulf on account of any loss, damage, or liability it may suffer or sustain, or become subject to, on account of the operation of the premises by Palmer.

13. It is further agreed that Palmer shall not assign or release the lease, or any interest therein, without procuring the consent of Gulf in writing.

14. This contract is entered into in accordance with and shall at all times be subject to the laws of the State of Oklahoma, and the rules and regulations of the Corporation Commission, the laws of the United States, and the rules and regulatory orders of any Board, Federal or State, having jurisdiction in the premises.

[fol. 186] 15. All notices necessary to be given under the terms of this agreement shall be in writing, by registered mail, addressed to the Gulf Oil Corporation, P. O. Box 661, Tulsa, Oklahoma, and The Palmer Oil Corporation, Wichita, Kansas.

Witness the signatures of the parties hereto the day and year first above written.

Gulf Oil Corporation, by Rush Greenslade, Vice-President.

Attest: D. B. Catterlin, Assistant Secretary.

The Palmer Oil Corporation, by Tom Palmer, President.

Attest: Otto H. Schnepel, Secretary.

[fol. 187] STATE OF OKLAHOMA,
County of Tulsa, ss:

Before me, the undersigned notary public in and for said county and state, on this 7th day of September, 1938, personally appeared Rush Greenslade, to me known to be the identical person who subscribed the name of the Gulf Oil Corporation, a corporation, the maker thereof, to the within

and foregoing instrument as its Vice President, and acknowledged to me that he executed the same as his free and voluntary act and deed and as the free and voluntary act and deed of such corporation, for the uses and purposes therein set forth.

Witness my hand and seal the day and year last above written.

E. G. Grear, Notary Public.

My commission expires Dec. 31, 1941.

STATE OF KANSAS,
County of Sedgwick, ss:

Before me the undersigned notary public in and for said county and state, on this 6th day of September, 1938, personally appeared Tony Palmer, to me known to be the identical person who subscribed the name of The Palmer Oil Corporation, a corporation, the maker thereof, to the within and foregoing instrument as its President, and acknowledged to me that he executed the same as his free and voluntary act and deed and as the free and voluntary act and deed of such corporation, for the uses and purposes therein set forth.

Witness my hand and seal the day and year last above written.

Jewell Thompson, Notary Public.

My commission expires March 3, 1941.

B

(Here follows 1 Paster, side folios 188, 189)

[fol. 188]

EXHIBIT 53

TABLE I

WEST CEMENT MEDRANO UNIT

VALUE OF RECOVERABLE OIL & GAS
OIL @ $1.52/BBL. & GAS @ $0.05/MCF

Tract Number	Company & Lease	Oil Zone Acre Feet (1)	Estimated Oil In Place (Thousand Bbls) (2)	Estimated Oil Recovery (No Allowance for Gravity Drainage) (Thousand Bbls) (3)	Estimated Additional Oil Recovery due to Gravity Drainage (Thousand Bbls) (4)	Oil Produced to March 1, 1946 (Thousand Bbls) (5)	Estimated Recoverable Oil as of March 1, 1946 (Thousand Bbls) (6)	Gas Zone Acre Feet (7)	Estimated Recoverable Gas (Million Cu. Ft.) (8)	Value of Recoverable Gas @ $0.05/MCF (Thousand Dollars) (9)	Value of Recoverable Oil @ $1.52/Bbl. (Thousand Dollars) (10)	Value of Recoverable Oil & Gas (Thousand Dollars) (11)	Percent of Total (12)	Tract Number
	Amerada Petroleum Co.													
15	Beemer	1,460	970.0	340.0	63.8	110.0	293.8	—	—	—	446.6	446.6	0.869%	15
49	Edwards	3,940	3,550.0	1,260.0	180.9	220.0	1,220.9	—	—	—	1,855.8	1,855.8	3.612	49
43	Hartshorn	4,447	3,970.0	1,410.0	255.3	330.0	1,335.3	—	—	—	2,029.6	2,029.6	3.951	43
69	McClaren N/2 & SW SE	336	290.0	100.0	8.5	—	108.5	—	—	—	82.5*	82.5*	0.161	69
70	McClaren NW SE SE	62	60.0	20.0	2.0	—	22.0	—	—	—	16.7*	16.7*	0.033	70
50	Wood	204	180.0	60.0	11.8	—	71.8	—	—	—	109.2	109.2	0.213	59
	Total Amerada	10,449	9,020.0	3,190.0	522.3	660.0	3,052.3	—	—	—	4,540.4	4,540.4	8.839%	
	Anderson-Prichard Oil Corp.													
62	Davis	90	70.0	20.0	0.7	—	20.7	1,780	929.0	46.5	31.4	77.9	0.151%	62
40	Hays	748	650.0	230.0	5.3	20.0	215.3	2,595	1,009.7	50.5	327.2	377.7	0.735	40
67	McClaren "A"	156	130.0	50.0	0.7	—	50.7	246	144.0	3.6*	38.5*	42.1*	0.082	67
68	McClaren "B"	35	30.0	10.0	0.7	—	10.7	66	33.0	0.9*	8.1*	9.0*	0.017	68
58	Pichard	1,092	930.0	330.0	32.2	170.0	192.2	—	—	—	292.2	292.2	0.569	58
64	Prentice "A"	2,105	1,810.0	640.0	36.8	80.0	396.8	692	370.0	18.5	907.2	925.7	1.802	64
65	Prentice "B"	355	320.0	110.0	11.2	60.0	61.2	—	—	—	93.0	93.0	0.181	65
56	Walker	1,408	1,210.0	430.0	30.9	70.0	390.9	34	19.7	1.0	594.2	595.2	1.159	56
66	Wray	—	—	—	—	—	—	29	16.5	0.5*	—	0.5*	0.001	66
	Total Anderson-Prichard	5,989	5,150.0	1,820.0	118.5	400.0	1,538.5	5,442	2,521.9	121.5	2,291.8	2,413.3	4.697%	
	Gulf Oil Corp.													
33	Holland	70	60.0	20.0	3.9	—	23.9	—	—	—	36.4	36.4	0.071%	33
5	Pell	3,592	2,840.0	1,010.0	61.2	40.0	1,031.2	47	25.1	1.3	1,567.4	1,568.7	3.053	5
14	Sherritt	18,255	13,850.0	4,920.0	588.2	920.0	4,588.2	1,425	565.0	28.2	6,974.0	7,002.2	13.830	14
30	Sterba (Below 6,000')	3,033	2,620.0	930.0	142.1	—	1,072.1	—	—	—	1,629.6	1,629.6	3.172	30
	Total Gulf	24,950	19,370.0	6,880.3	795.4	960.0	6,715.4	1,472	590.1	29.5	10,207.4	10,236.9	19.926%	

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	Magnolia Petroleum Co.													
51	Caddo-Rowe	—	—	—	—	—	—	168	63.2	3.2	—	3.2	0.008%	51
39	Cement-Henlay	2,040	1,770.0	630.0	21.0	150.0	501.0	6,462	2,336.1	116.8	761.7	878.5	1.710	39
47	I. Edwards	2,881	2,600.0	930.0	55.9	260.0	725.9	268	133.0	6.6	1,103.4	1,110.0	2.161	47
48	L. L. Edwards	2,198	1,970.0	700.0	23.7	70.0	653.7	1,810	875.0	43.7	993.6	1,037.3	2.019	48
60	Gingrich	—	—	—	—	—	—	662	368.0	18.4	—	18.4	0.036	60
59	Gregory	—	—	—	—	—	—	70	42.0	2.1	—	2.1	0.004	59
52	Lindsey	—	—	—	—	—	—	5,056	2,324.6	116.6	—	116.6	0.227	52
53	Magnolia-Davis	357	300.0	110.0	4.6	—	114.6	1,781	908.2	45.4	174.2	219.6	0.427	53
46	Medrano	54	50.0	20.0	—	—	20.0	10,898	4,419.7	221.0	30.4	251.4	0.489	46
45	Niles	—	—	—	—	—	—	5,924	2,042.6	101.9	—	101.9	0.198	45
44	Pickard-Edwards	—	—	—	—	—	—	157	53.8	2.7	—	2.7	0.005	44
38	Sames	—	—	—	—	—	—	9,735	3,335.0	166.5	—	166.5	0.324	38
	Total Magnolia	7,530	6,690.0	2,390.0	105.2	480.0	2,015.2	42,991	16,901.2	844.9	3,063.3	3,908.2	7.608%	
	Palmer Oil Co.													
31	Sterba (Above 6,000')	6,355	5,260.0	1,870.0	160.5	300.0	1,730.5	8,194	2,043.0	132.0	2,630.4	2,762.4	5.377%	31
	Phillips Petroleum Co.													
28	Farwell	—	—	—	—	—	—	6,704	2,297.0	114.9	—	114.9	0.224%	28
18	Fletcher	7,894	5,260.6	1,870.0	88.1	330.0	1,628.1	13,895	5,038.0	251.7	2,474.8	2,726.5	5.307	18
27	Garn "A"	—	—	—	—	—	—	325	111.8	5.6	—	5.6	0.011	27
71	Garn "B"	—	—	—	—	—	—	1,308	448.7	22.4	—	22.4	0.044	71
25	Garrison	4	—	—	—	—	—	11,640	3,990.0	199.5	—	199.5	0.388	25
43	Hartshorn	10,006	8,760.0	3,110.0	356.6	550.0	2,916.6	60	23.4	1.1	4,433.3	4,434.3	8.631	43
32	Margaret	4,480	3,880.0	1,380.0	247.4	230.0	1,397.4	—	—	—	2,124.0	2,124.0	4.134	32
26	Oaks	16,958	11,320.0	4,020.0	423.1	670.0	3,773.1	6,880	2,204.0	110.2	5,735.0	5,845.2	11.377	26
	Total Phillips	39,348	29,220.0	10,380.0	1,115.2	1,780.0	9,715.2	40,812	14,112.9	705.4	14,767.0	15,472.4	30.116%	
	Potter													
54	Davis	—	—	—	—	—	—	1,300	552.8	27.6	—	27.6	0.054%	54
	Ramsey Petroleum Co.													
61	Gingrich	—	—	—	—	—	—	31	16.9	0.8	—	0.8	0.002%	61
	F. L. Rockstool													
55	Davis	—	—	—	—	—	—	750	379.0	18.9	—	18.9	0.067%	55

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TABLE 2

WEST CEMENT MEDRANO UNIT
PERCENTAGE OF INTEREST IN UNIT

Tract Number	Company & Lease	Percent of Total Value of Recoverable Oil & Gas (Column 1)	Percent of total Current Income (Column 2)	80% Column 1	20% Column 2	Total Percentage of Interest in Unit
	Amerada Pet. Co.					
15	Beemer	0.869	2.096	0.695	0.419	1.114
49	Edwards	3.612	3.250	2.890	0.650	3.540
43	Hartshorn	3.951	4.305	3.161	0.861	4.022
69	McClaren N/2 SW SE	0.161	.....	0.129	.....	0.129
70	McClaren NW SE SE	0.033	.....	0.026	.....	0.026
50	Woods	0.213	.....	0.170	.....	0.170
	Total—Amerada	8.839	9.651	7.071	1.930	9.001
	Anderson-Prichard Oil Corp.					
62	Davis	0.151	1.403	0.121	0.281	0.402
40	Hays	0.735	.....	0.588	.....	0.588
67	McClaren "A"	0.082	.....	0.066	.....	0.066
68	McClaren "B"	0.017	.....	0.014	.....	0.014
58	Pickard	0.569	3.249	0.455	0.650	1.105
64	Prentice "A"	1.802	6.498	1.441	1.300	2.741
65	Prentice "B"	0.181	1.318	0.145	0.263	0.408
56	Walker	1.159	3.249	0.927	0.650	1.577
66	Wray	0.001	.....	0.001	.....	0.001
	Total—Anderson-Prichard	4.697	15.717	3.758	3.144	6.902

Exhibit 54

MAP OF

WEST CEMENT MEDRANO UNIT

BY

COMMITTEE OF GEOLOGISTS

SET OF FOUR MAPS - MAP NO. 1

STRUCTURAL GEOLOGICAL MAP

DATUM - TOP OF THE MEDRANO SAND

CONTOUR INTERVAL - 100 FEET

SCALE

DATE - APRIL 25, 1946

COMMITTEE OF GEOLOGISTS

J. LAWRENCE MUIR	AMERADA PETROLEUM CORPORATION
H. W. BRAUCHLI	ANDERSON-PRICHARD OIL CORPORATION
A. H. RICHARDS	
J. T. RICHARDS	GULF OIL CORPORATION
R. L. MOREMAN	MAGNOLIA PETROLEUM COMPANY
A. J. MONTGOMERY	PHILLIPS PETROLEUM COMPANY
J. CURTIS HICKS	
P. A. WALLACE	STEPHENS PETROLEUM COMPANY AND RAY STEPHENS INC.

LEGEND

- DRILLING WELL
- OIL WELL
- GAS WELL
- DRY HOLE
- OIL WELL - MEDRANO SAND
- GAS WELL - MEDRANO SAND
- -4300TP SUB-SEA DATUM ON THE TOP OF THE MEDRANO SAND

1495

EXHIBIT 54

Exhibit 54R 1496

MAP OF
WEST CEMENT MEDRANO UNIT
BY
COMMITTEE OF GEOLOGISTS

SET OF FOUR MAPS - MAP NO 1
STRUCTURAL GEOLOGICAL MAP
DATUM - TOP OF THE MEDRANO SAND
CONTOUR INTERVAL - 100 FEET

SCALE

DATE - APRIL 25, 1948

COMMITTEE OF GEOLOGISTS

J. LAWRENCE MUIR : AMERADA PETROLEUM CORPORATION
R. W. BRAUN : ANDERSON-PRICHARD OIL CORPORATION
A. H. RICHARDS :
C. A. HARDY : GULF OIL CORPORATION
W. L. MORGAN : MAGNOLIA PETROLEUM COMPANY
A. J. MONTGOMERY : PHILLIPS PETROLEUM COMPANY
CURTIS HICKS :
P. A. WALLACE : STEPHENS PETROLEUM COMPANY AND RAY STEPHENS INC

LEGEND

- DRILLING WELL
- OIL WELL
- GAS WELL
- DRY HOLE
- OIL WELL MEDRANO SAND
- GAS WELL MEDRANO SAND
- SUB SEA DATUM ON THE TOP OF THE MEDRANO SAND

EXHIBIT 54R

TABLE 2

WEST CEMENT MEDRANO UNIT
PERCENTAGE OF INTEREST IN UNIT

Tract Number	Company & Lease	Percent of Total Value of Recoverable Oil & Gas (Column 1)	Percent of total Current Income (Column 2)	80% Column 1	20% Column 2	Total Percentage of Interest in Unit
	Gulf Oil Corp.					
33	Holland	0.071	.....	0.057	.....	0.057
5	Pell	3.053	1.100	2.442	0.220	2.662
14	Sherritt	13.630	10.950	10.904	2.190	13.094
30	Sterba (Below 6000')	3.172	.....	2.538	.....	2.538
	Total—Gulf	19.926	12.050	15.941	2.410	18.351
	Magnolia Petroleum Co.					
51	Caddo-Rowe	0.006	.....	0.005	.....	0.005
39	Cement-Henley	1.710	1.120	1.368	0.224	1.592
47	I. Edwards	2.161	3.249	1.729	0.650	2.379
48	L. L. Edwards	2.019	1.106	1.615	0.221	1.836
60	Gingrich	0.036	.....	0.029	.....	0.029
59	Gregory	0.004	.....	0.003	.....	0.003
52	Lindsey	0.227	0.683	0.182	0.137	0.319
53	Magnolia-Davis	0.427	.....	0.342	.....	0.342
46	Medrano	0.489	1.088	0.391	0.218	0.609
45	Niles	0.198	1.070	0.158	0.214	0.372
44	Pickard-Edwards	0.005	.....	0.004	.....	0.004
38	Sames	0.324	1.608	0.259	0.322	0.581
	Total—Magnolia	7.606	9.924	6.085	1.986	8.071

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TABLE 2

WEST CEMENT MEDRANO UNIT
PERCENTAGE OF INTEREST IN UNIT

Tract Number	Company & Lease	Percent Total Value of Recoverable Oil & Gas (Table 1, Col. 12)	Percent of Total Current Income (Table 2, Column 4)	80% Column 1, Table 3	20% Column 2, Table 3	Total
	Palmer Oil Co.					
31	Sterba (Above 6000')	5.377	4.220	4.302	0.843	5.145
	Phillips Petroleum Co.					
28	Farwell	0.224	0.049	0.178	0.010	0.188
18	Fletcher	5.307	5.638	4.246	1.128	5.374
27	Garn "A"	0.011	0.072	0.009	0.014	0.023
71	Garn "B"	0.044	0.031	0.035	0.006	0.041
25	Garrison (½ Interest)	0.194	.....	0.155	.....	0.155
42	Hartshorn	8.631	6.498	6.905	1.300	8.205
32	Margret	4.134	3.249	3.307	0.650	3.957
26	Oaks	11.377	10.402	9.101	2.080	11.181
23	Dixon (½ Interest)	0.139	0.776	0.111	0.155	0.266
	Total—Phillips	30.061	26.715	24.047	5.343	29.390
	Potter					
54	Davis	0.054	0.119	0.043	0.023	0.066
	Ramsey Petroleum Co.					
61	Gingrich	0.002	.....	0.002	.....	0.002

TABLE 2

WEST CEMENT MEDRANO UNIT
PERCENTAGE OF INTEREST IN UNIT

Tract Number	Company & Lease	Percent Total Value of Recoverable Oil & Gas (Table 1, Col. 12)	Percent of Total Current Income (Table 2, Column 4)	80% Column 1, Table 3	20% Column 2, Table 3	Total
	F. L. Rookstool					
55	Davis	0.037	.....	0.030	.....	0.030
	Ray Stephens, Inc.					
16	Farwell	0.074	0.104	0.059	0.021	0.080
72	Farwell No. 2	0.071	0.431	0.057	0.087	0.144
21	Griffin S/2 NW SE	0.010	.....	0.008	.....	0.008
22	Griffin S/2 NE SE	0.002	.....	0.002	.....	0.002
34	Melton	0.032	0.002	0.025	0.001	0.026
36	Melton No. 1	0.013	0.010	0.010	0.002	0.012
35	Melton No. 2	0.002	.....	0.001	.....	0.001
37	Melton No. 4	0.021	0.001	0.017	.....	0.017
1	Odla-Tahle	0.225	.....	0.180	.....	0.180
7	Wilhite N/2 SE less 10	0.096	0.031	0.077	0.005	0.082
11	Wilhite NW SE SE	0.018	0.006	0.014	0.001	0.015
13	Wilhite SE SE SE	0.032	0.006	0.026	0.001	0.027
8	Wilhite SW NE SE	0.013	0.006	0.010	0.001	0.011
12	Wilhite NE SE SE	0.020	0.006	0.016	0.001	0.017
10	Wilhite NE SW SE	0.017	0.142	0.014	0.027	0.041
	Total—Ray Stephens	0.646	0.745	0.516	0.147	0.663

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Table 3

West Cement Medrano Unit
Current Income

Tract Number	Company & Lease	Average Daily Oil Income (1)	Average Daily Gas Income (2)	Total Avg. Daily Income (3)	Percent of Total (4)
	Amerada Petroleum Co.				
15	Beemer	$ 196.08	$ —	$ 196.08	2.096%
49	Edwards	304.00	—	304.00	3.250
43	Hartshorn	402.80	—	402.80	4.305
	Total—Amerada	$ 902.88	$ —	$ 902.88	9.651
	Anderson-Prichard Oil Corp.				
62	Davis	$ —	$131.05	$ 131.05	1.403
58	Pickard	304.00	—	304.00	3.249
64	Prentice "A"	608.00	—	608.00	6.498
65	Prentice "B"	123.27	—	123.27	1.318
56	Walker	304.00	—	304.00	3.249
	Total—Anderson Prichard	$1,339.27	$131.05	$1,470.32	15.717
	Gulf Oil Corporation				
5	Pell	$ 102.90	$ —	$ 102.90	1.100
14	Sherritt	1,024.48	—	1,024.48	10.950
	Total—Gulf	$1,127.38	$ —	$1,127.38	12.050
	Magnolia Pet. Co.				
39	Cement-Henley	$ 69.01	$ 35.75	$ 104.76	1.120
47	I. Edwards	304.00	—	304.00	3.249
48	L. L. Edwards	43.47	60.00	103.47	1.106
52	Lindsey	—	63.90	63.90	0.683
46	Medrano	—	101.80	101.80	1.088
45	Niles	—	100.15	100.15	1.070
38	Sames	—	150.45	150.45	1.608
	Total—Magnolia	$ 416.48	$512.05	$ 928.53	9.924
	Palmer Oil Company				
31	Sterba (Above 6000)	$ 304.00	$ 90.80	$ 394.80	4.220
	Phillips Pet. Co.				
28	Farwell	$ —	$ 4.63	$ 4.63	0.049
18	Fletcher	501.60	25.85	527.45	5.638
27	Garn "A"	—	6.77	6.77	0.072
71	Garn "B"	—	2.82	2.82	0.031
42	Hartshorn	608.00	—	608.00	6.498
32	Margaret	304.00	—	304.00	3.249
26	Oaks	912.00	61.20	973.20	10.402
	Total—Phillips	$2,325.60	$101.27	$2,426.87	25.939

EXHIBIT 53R

TABLE I

[illegible] OKLAHOMA PART

VALUE OF [illegible] OIL AND GAS

Tract Number	Company & Lease	Oil Reserve Acre Feet	Oil Recovery (Without Gravity Drainage) Bbls.	Oil Recovery By Gravity Drainage Bbls.	Oil Prod. To March 1, 1946 Bbls.	Recoverable Oil (Col 2 + 3-4) Bbls.	Gas Reserve Acre Feet	Recoverable Gas MCF	Equity Value @ $0.05/MCF Dollars	Oil Equity Value @ $1.25/Bbl Dollars	Oil & Gas Equity Value Dollars	Per Cent of Total	Tract Number
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
	Amerada Petroleum Co.												
15	Decker	1460	345,421	64 557	108 666	301314	–	–	–	457997	457997	.89643	15
49	Edwards	3940	1,244,868	181 161	222 104	1225728	–	–	–	1863411	1863411	3.647732	49
43	Hitchcock	4447	1,418,210	254 686	328 905	1343191	–	–	–	2041650	2041650	3.996098	43
69	McClaren N/2 & SW SE	336	102,000	8.214	–	110219	–	–	–	83763	83763	.16395	69
70	McClaren NW SE SE	62	18,821	1836	–	20657	–	–	–	15679	15679	.03073	70
50	Mood	204	65 593	11 767	–	77361	–	–	–	117589	117589	.23015	50
	Total Amerada	10449	3 217 114	622226	660675	3078665				4580109	4580109	8.964457	
	Anderson-Prichard Oil Corp.												
62	Burke	90	27321	350	–	27671	1750	913570	46179	42060	88239	.17271	62
60	Hays	748	230130	5594	21 142	214582	2595	1009760	50488	326165	376653	.73721	60
67	McClaren "A"	156	47357	962	–	48319	246	144,430	3612*	36722	40334	.07895	67
68	McClaren "B"	35	10625	544	–	11149	66	30580	965*	8473	9238	.01808	68
58	Pickard	1094	331,498	32417	168670	195245	–	–	–	296774	296774	.58087	58
64	Prentice "A"	2105	639015	36785	129748	546052	692	369,780	18489	829999	848488	1.66073	64
65	Prentice "B"	355	107,767	10836	6899	111702	–	–	–	169787	169787	.33232	65
56	Walker	1408	427,427	30762	69800	388383	54	19,670	983	590392	591325	1.15739	56
66	Wray	–	–	–	–		29	16570	414*		414	.00081	66
	Total Anderson-Prichard	5989	1821140	118222	396259	1543103	5442	2514400	120930	2300330	2421260	4.73907	
	Gulf Oil Corp.												
33	Holland	70	21536	3881	–	25417	–	–	–	38437	38437	.07523	33
5	Pell	3592	1008895	61992	43975	1027112	87	25060	1253	1561210	1562463	3.05818	5
24	Sherrill	18255	4,926,537	590179	917383	4598933	1425	564,740	28237	6990378	7018615	13.737048	24
30	Stocks (Below 6,500')	2550	784533	171696	–	906229	–	–	–	1377968	1377968	2.696618	30
	Total Gulf	24467	6740701	777748	960358	6557691	1512	589800	29490	9967990	9997480	19.568797	
	Lloyd Ribble												
68	Burke	–	–	–	–	–	18	7990	449		449	.00088	68

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Tract Number	Summary & Lessee	Oil Zone Acre Feet	Oil Recovery (Without Gas Recharge) Bbls.	Oil Recovery By Gas Recharge Bbls.	Oil Prod. To Date Bbls.	Recoverable Oil (Col. 3 + Col. 4) Bbls.	Gas Zone Acre Feet	Gas MCF	Gas Recovery Value @ $1.65/MCF Millions	Gas Recovery Value @ $1.75/MCF Millions	Gas Recovery Value @ $1.85/MCF Millions	Oil Value @ $3.00/Bbl Millions	Total Value Millions	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
	Magnolia Petroleum Co.													
21	Cobb-Estes	—	—	—	—	—	168	43270	.0714			3163	.00619	21
39	Cozart-Bailey	2040	527,676	21329	106398	502622	1462	2337460	116878	763985	880258	1584090	3.172409	39
49	I. Edwards	2881	926,357	56099	257389	725117	748	132620	6681	1102178	1108859	2175976	4.351952	49
48	L. L. Edwards	2198	705,613	23982	66402	663193	1810	874600	43730	1007977	1051707	2065377	4.130754	48
60	Gingrich	—	—	—	—	—	662	968080	18,404		18404	36082	.072164	60
59	Gregory	—	—	—	—	—	70	41940	2097		2097	4118	.008236	59
52	Lindsey	—	—	—	—	—	5056	2225080	116,254		116254	228754	.457508	52
53	Magnolia-Davis	377	108374	4717	—	113091	1781	907860	45892	171878	217770	425301	.850571	53
46	Robeson	54	17,363	244	—	17597	10898	4419210	220,961	26747	247708	487484	.974968	46
45	Wilson	—	—	—	—	—	5924	2042,600	102,130		102130	199900	.399830	45
44	Pickard-Edwards	—	—	—	—	—	157	58890	2694		2694	5277	.010554	44
38	Sears	—	—	—	—	—	9785	2887930	166,896		166896	326662	.653324	38
	Total Magnolia	7530	2,385,332	106,311	470,179	2,021,570	42791	16,904,500	845,225	3072785	3918010	7,644,966	15.289932	
	Palmer Oil Co.													
31	Starks (Above 6,000')	1,000	1,775,166	45,941	224,505	1,629,672	7582	2433750	121,687	2479132	2598819	5,098663	10.197326	31
	Phillips Petroleum Co.													
20	Parcell	—	—	—	—	—	6764	2295850	114,943		114943	224955	.449898	20
18	Fletcher	7894	1875308	58152	320130	1633324	10895	5087950	254,397	2482652	2734543	5,352,228	10.704456	18
27	Cora "A"	—	—	—	—	—	925	111840	5592		5592	10951	.021903	27
71	Cora "B"	—	—	—	—	—	1808	448,530	22,427		22427	43904	.087808	71
25	Corrigan	4	946	—	—	946	11640	3992,760	199,688	1438	201076	393567	.787134	25
42	Richardson	10000	3,118,433	357,847	585,610	2931,370	60	28,410	1421	4454618	4455789	8,722,128	17.444256	42
32	Rungeth	4800	1,352,166	242872	221,115	1363865	—	—	—	2073075	2073075	4,057,359	8.114718	32
26	Cuba	16000	4,034,694	424,667	660,859	3792,552	6880	2252,750	110187	5764679	5874816	11,499,648	22.999296	26
	Total Phillips	39757	10,381,247	1,113,528	1,773,728	9,731,357	40,842	14,116,130	705,806	14776462	15482268	30,301,214	60.602428	
	Pelto													
24	Banks	—	—	—	—	—	1000	553,40	27,670		27670	55716	.111386	24
	Ramsey Petroleum Co.													
61	Gingrich	—	—	—	—	—	31	16,960	848		848	1664	.003328	61
	Lee Hunkins													
55	Davis	—	—	—	—	—	750	414,970	20749		20749	41961	.083922	55

TABLE II

Tract Number	Company & Lease	Percent of Total Value of Recoverable Oil & Gas (Column 1)	Percent of total Current Income (Column 2)	80% Column 1	20% Column 2	Total Percentage of Interest in Unit
	AMERADA PET. CO					
15	Bonnu	.89643	2.02978	.71715	.40598	1.12313
69	Edwards	3.64722	3.14711	2.91778	.62942	3.54720
13	Hartshorn	3.99609	4.16992	3.19687	.83398	4.03085
69	McClaren N/2 SW SE	.16395		.13116		.13116
70	McClaren SW SE SE	.03073		.02458		.02458
50	Woods	.23015		.18412		.18412
	TOTAL AMERADA	8.96457	9.34691	7.17166	1.86938	9.04104
	ANDERSON PRICHARD OIL CORP					
62	Davis	.17271	1.35667	.13817	.27134	.40951
40	Hays	.73721		.58977		.58977
67	I McClaren "A"	.07896		.06316		.06316
68	McClaren "B"	.01008		.01006		.01006
58	Pickard	.55087	3.14711	.46470	.62942	1.09412
61	Prentice "A"	1.66473	6.29422	1.32858	1.25884	2.58742
65	Prentice "B"	.33237	1.27453	.26586	.25492	.52078
56	Walker	1.15739	3.14711	.92591	.62942	1.55533
66	Gray	.00081		.00065		.00065
	TOTAL ANDERSON PRICHARD	4.73967	15.26944	3.79126	3.04304	6.83520
	GULF OIL CORP					
33	Hollam	.01562		.06249		.06249
5	Pail	3.05919	1.06525	2.44644	.21305	2.65949
14	Sherrat	13.73742	10.50576	10.97194	2.12115	13.11709
30	Sterts (Below 6000)	2.69610		2.15688		2.15688
	TOTAL GULF	19.50833	11.57101	15.63775	2.33420	17.98195
	MAGNOLIA PETROLEUM CO					
51	Caddo Rowe	.00619		.00495		.00495
39	Cement Henley	1.77409	1.08451	1.37927	.21690	1.59617
47	I Edwards	2.17025	3.14711	1.73620	.62942	2.36562
48	L L Edwards	1.05847	1.07116	1.64679	.21423	1.86102
60	Gingrich	.03602		.02882		.02882
59	Gregory	.00411		.00329		.00329
52	Lindsey	1.24154	.16151	.18203	.18240	.91433

165

1492

Exhibit 55 1497

MAP OF
WEST CEMENT MEDRANO UNIT
BY
COMMITTEE OF GEOLOGISTS

SET OF FOUR MAPS - MAP NO. 2

STRUCTURAL GEOLOGICAL MAP
DATUM - BASE OF THE MEDRANO SAND
CONTOUR INTERVAL - 100 FEET

SCALE

DATE - APRIL 25, 1946

COMMITTEE OF GEOLOGISTS

J. LAWRENCE MUIR	AMERADA PETROLEUM CORPORATION
R. W. BRASCHER	ANDERSON-PRICHARD OIL CORPORATION
J. M. RICHARDS	GULF OIL CORPORATION
J. T. RICHARDS	MAGNOLIA PETROLEUM COMPANY
W. L. MOREMAN	PHILLIPS PETROLEUM COMPANY
R. J. MONTGOMERY	STEPHENS PETROLEUM COMPANY AND RAY STEPHENS INC.
C. CURTIS HICKS	
P. H. WALLACE	

LEGEND

- DRILLING WELL
- OIL WELL
- GAS WELL
- DRY HOLE
- OIL WELL - MEDRANO SAND
- GAS WELL - MEDRANO SAND
- SUB-SEA DATUM ON THE BASE OF THE MEDRANO SAND
- SUB-SEA TOTAL DEPTH OF WELL WHICH DID NOT PENETRATE ALL OF MEDRANO SAND

EXHIBIT 55

TABLE II
WEST CRESCENT MEDRANO UNIT
PERCENTAGE OF INTEREST IN UNIT

Tract Number	Company & Lease	Percent of Total Value of Recoverable Oil & Gas (Column 1)	Percent of total Current Income (Column 2)	80% Column 1	20% Column 2	Total Percentage of Interest in Unit
	MAGNOLIA PETROLEUM CO. Cont.					
53	Magnolia Davis	.42078		.24024		.24024
46	Medrano	1.24434	1.05387	.38747	.21078	.59825
45	Wilcox	1.19499	1.03678	.15992	.20736	.36728
44	Pinkard Edwards	.20527	1.55751	.00422	.31150	.31572
38	Sacco	.32600		.96133		.24133
	TOTAL - MAGNOLIA	7.56586	9.61245	6.13493	1.92249	8.05742
	PALMER OIL CO					
31	Herbe (Above 6000')	5.08663	7.23421	4.06930	1.44684	5.51614
	PHILLIPS PETROLEUM CO.					
28	Farrell	.22475	.04793	.17999	.00959	.18958
18	Fletcher	5.35229	5.46034	4.28183	1.09207	5.37390
27	Guss "A"	.01095	.07008	.00876	.01401	.02277
71	Guss "B"	.04897	.02919	.03512	.00584	.04096
35	Garrison (½ Interest)	.19678		.15742		.15742
42	Hartshorn	8.72124	6.29422	6.97699	1.25884	8.23583
34	Margret	4.05759	3.14714	3.24607	.62942	3.87549
25	Oaks	11.49268	10.07489	9.19895	2.01498	11.21393
29	Dixon (½ Interest)	.13965	.75210	.11172	.15042	.26214
	TOTAL - PHILLIPS	30.24604	25.85526	24.19683	5.17517	29.37200
	TEXAS					
54	Davis	.03416	.11543	.04333	.02309	.06642
	TANNEY PETROLEUM CO.					
62	Gingrich	.00166		.00133		.00133
	T. L. THORTON					
55	Davis	.04061		.03249		.03249
	RAY HUGHES, INC.					
16	Farrell	.07137	.10049	.05709	.02018	.07727
70	Farrell No. 2	.04884	.44741	.03537	.01348	.04885
33	Griffin S/2 NW SE	.01635		.01308		.01308
32	Griffin S/2 NE SE	.00104		.00083		.00083

June 15, 1947

TABLE IV — WEST CENTRAL AREA — UNIT

AVERAGE DAILY — CURRENT INCOME

Tract Number	Company & Lease	Average Daily Income Oil Dollars 3	Gas Dollars 4	Total Dollars 5	Per Cent of Total 6	Average Daily Production (May, June, July, 1946) Oil (Bbls) 1	Gas (M cf) 2
	MAGNOLIA PETROLEUM CO. Cont.						
53	Maynard [illegible]						
48	Nesbitt		101.80	101.80	1.05387		2036.
47	Niles		100.15	100.15	1.03678		2003.
44	Pickard		150.45	150.45	1.55751		3009.
38	Sarver						
	TOTAL	416.48	512.05	928.53	9.61245	1M.	19261.
	PALMER [illegible]						
31	[illegible]	608.00	90.80	698.80	7.23421	400.	1816.
	PHILLIPS PETROLEUM CO.						
28	Farwell		4.63	4.63	.04793		92.6
18	Fletcher	501.60	25.85	527.45	5.46034	330.	517.
27	Garner "A"		6.77	6.77	.07008		135.4
71	Garner "B"		2.82	2.82	.02919		56.4
25	Garrison [illegible]						
42	Hartsell	608.00		608.00	6.29424	400.	
32	Morgan	304.00		304.00	3.14711	200	
26	Oats	912.00	61.20	973.20	10.07489	600.	1224.
29	Diamond A		72.65	72.65	.75210		1453.
	TOTAL PHILLIPS	2325.60	173.92	2499.52	25.88416	1530.	3478.4
	PLOTNER						
54	Davis		11.15	11.15	.11543		223.
	ROBERT PETROLEUM CO.						
61	Rugeri [illegible]						
	F. L. ROCKSTOOL						
55	Davis						
	RAY STRICKLAND, INC.						
16	Farwell		9.72	9.72	.10063		194.4
72	Farwell No. 2		40.32	40.32	.41749		806.4
21	Griffin S/2 NW SE						
22	Griffin S/2 NE SE						

1494

R 10 W

R 9 W

1498

EXHIBIT 55R

Exhibit 55 R

MAP OF
WEST CEMENT MEDRANO UNIT
BY
COMMITTEE OF GEOLOGISTS

Exhibit 55 R

MAP OF
WEST CEMENT MEDRANO UNIT
BY
COMMITTEE OF GEOLOGISTS

SET OF FOUR MAPS - MAP NO 2

STRUCTURAL GEOLOGICAL MAP
DATUM - BASE OF THE MEDRANO SAND
CONTOUR INTERVAL - 100 FEET

SCALE

DATE - APRIL 25 1946

COMMITTEE OF GEOLOGISTS

LEGEND

SUB-SEA DATUM ON THE BASE OF THE MEDRANO SAND

SUB-SEA TOTAL DEPTH OF OF WELL WHEN DID NOT PENETRATE ALL OF MEDRANO SAND

T 6 N

T 5 N

R 10 W

R 9 W

Exhibit 56 (1499)

MAP OF
WEST CEMENT MEDRANO UNIT
BY
COMMITTEE OF GEOLOGISTS

SET OF FOUR MAPS -- MAP NO. 3

ISOPACHOUS MAP
SHOWING
THICKNESS OF NET MEDRANO GAS SAND
ISOPACH LINE INTERVAL - 25 FEET
SCALE

DATE - APRIL 25, 1946

COMMITTEE OF GEOLOGISTS

J. LAWRENCE MUIR -- AMERADA PETROLEUM CORPORATION
R. W. BRAUCHLI -- ANDERSON-PRICHARD OIL CORPORATION
A. M. RICHARDS
J. T. RICHARDS -- GULF OIL CORPORATION
W. L. MOREMAN -- MAGNOLIA PETROLEUM COMPANY
A. J. MONTGOMERY -- PHILLIPS PETROLEUM COMPANY
I. CURTIS HICKS
P. A. WALLACE -- STEPHENS PETROLEUM COMPANY AND RAY STEPHENS INC

LEGEND

- DRILLING WELL
- OIL WELL
- GAS WELL
- DRY HOLE
- OIL WELL - MEDRANO SAND
- GAS WELL - MEDRANO SAND

FIGURE DENOTES THICKNESS OF NET MEDRANO SAND CAPABLE OF PRODUCING GAS

R 10 W

R 9 W

T 6 N

T 5 N

EXHIBIT 56

Exhibit 56R

MAP OF
WEST CEMENT MEDRANO UNIT
BY
COMMITTEE OF GEOLOGISTS

SET OF FOUR MAPS - MAP NO 3

ISOPACHOUS MAP
SHOWING
THICKNESS OF NET MEDRANO GAS SAND
ISOPACH LINE INTERVAL - 25 FEET
SCALE

DATE - APRIL 25 1946

COMMITTEE OF GEOLOGISTS

[illegible]	AMERADA PETROLEUM CORPORATION
[illegible]	ANDERSON-PRICHARD OIL CORPORATION
[illegible]	GULF OIL CORPORATION
[illegible]	MAGNOLIA PETROLEUM COMPANY
[illegible]	PHILLIPS PETROLEUM COMPANY
[illegible]	STEPHENS PETROLEUM COMPANY AND RAY STEPHENS INC

LEGEND

N

FIGURE DENOTES THICKNESS OF NET MEDRANO SAND CAPABLE OF PRODUCING GAS

R 10 W

R 9 W

1500

EXHIBIT 56R

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Exhibit 57

MAP OF
WEST CEMENT MEDRANO UNIT
BY
COMMITTEE OF GEOLOGISTS

SET OF FOUR MAPS - MAP NO. 4
ISOPACHOUS MAP
SHOWING
THICKNESS OF NET MEDRANO OIL SAND
ISOPACH LINE INTERVAL - 25 FEET
SCALE

DATE - APRIL 25, 1948

COMMITTEE OF GEOLOGISTS

- J. LAWRENCE MUIR — AMERADA PETROLEUM CORPORATION
- R. W. BRAUCHLI — ANDERSON-PRICHARD OIL CORPORATION
- R. H. RICHARDS
- J. T. RICHARDS — GULF OIL CORPORATION
- W. L. MOREMAN — MAGNOLIA PETROLEUM COMPANY
- A. J. MONTGOMERY — PHILLIPS PETROLEUM COMPANY
- J. CURTIS HICKS
- P. A. WALLACE — STEPHENS PETROLEUM COMPANY AND RAY STEPHENS INC

LEGEND

- DRILLING WELL
- OIL WELL
- GAS WELL
- DRY HOLE
- OIL WELL - MEDRANO SAND
- GAS WELL - MEDRANO SAND
- 73 FIGURE DENOTES THICKNESS OF NET MEDRANO SAND CAPABLE OF PRODUCING OIL

EXHIBIT 57

Diagram
Indicating Medrano Sand
at Sterba Fault on east
side of Magnolia-
Cement-Henley Lease
Sec. 35-T.6 N.-R.10 W.

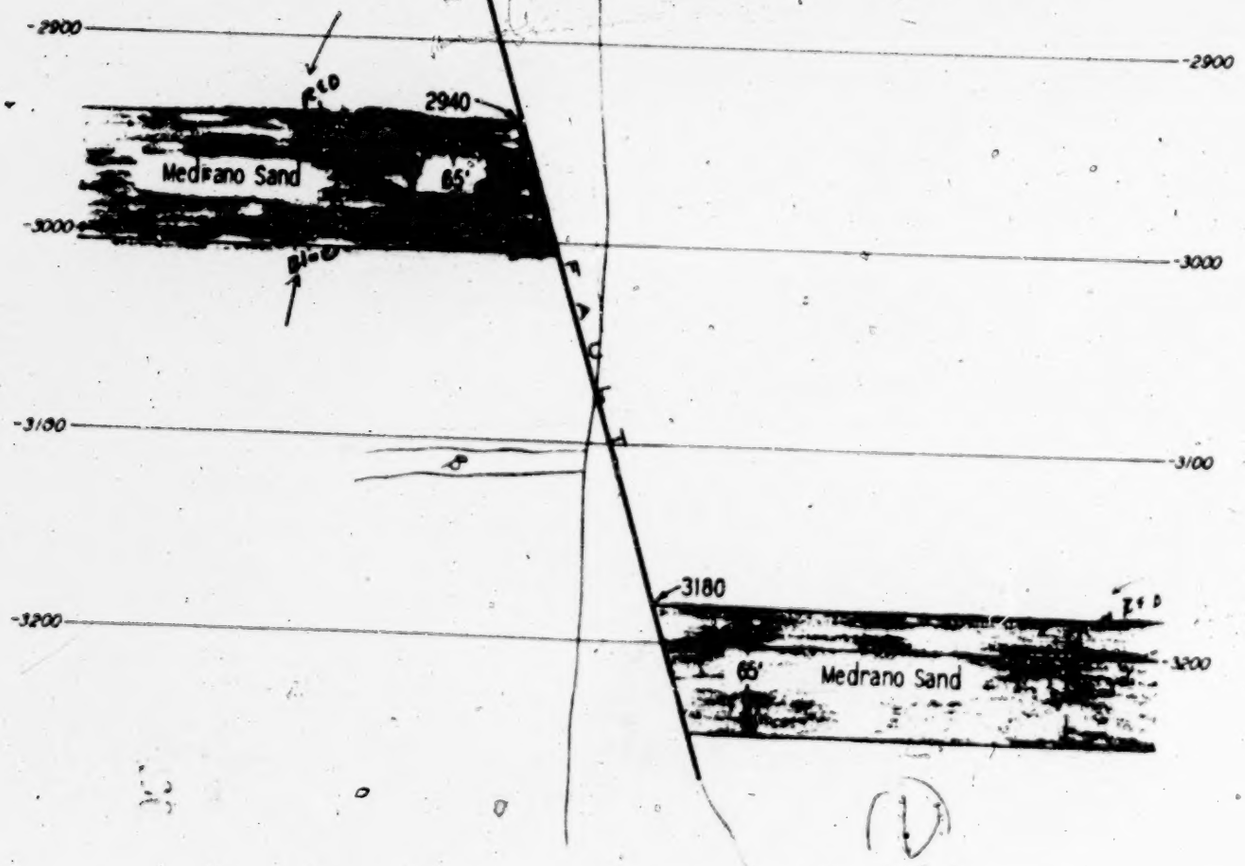


Exhibit 57R (P. 1502)

MAP OF
WEST CEMENT MEDRANO UNIT
BY
COMMITTEE OF GEOLOGISTS

SET OF FOUR MAPS - MAP NO. 4
ISOPACHOUS MAP
SHOWING
THICKNESS OF NET MEDRANO OIL SAND
ISOPACH LINE INTERVAL - 25 FEET
SCALE
0 500 1000 2000 4000 FEET

DATE - APRIL 23, 1946

COMMITTEE OF GEOLOGISTS

- J. LAWRENCE MUIR — AMERADA PETROLEUM CORPORATION
- R. M. BRAUN — ANDERSON-PRICHARD OIL CORPORATION
- A. M. RICHARDS
- J. T. R. HARDS — GULF OIL CORPORATION
- L. L. GRAHAM — MAGNOLIA PETROLEUM COMPANY
- R. J. MONTGOMERY — PHILLIPS PETROLEUM COMPANY
- CURTIS NICKS
- P. A. WALLACE — STEPHENS PETROLEUM COMPANY AND RAY STEPHENS INC.

LEGEND

- DRILLING WELL
- OIL WELL
- GAS WELL
- DRY HOLE
- OIL WELL - MEDRANO SAND
- GAS WELL - MEDRANO SAND
- 73 FIGURE DENOTES THICKNESS OF NET MEDRANO SAND CAPABLE OF PRODUCING OIL

EXHIBIT 57R

Exhibit 66

Indicating Medrano Sand at Sterba Fault on east side of Palmer-Sterba lease Sec. 35-T.6N-R.10W.

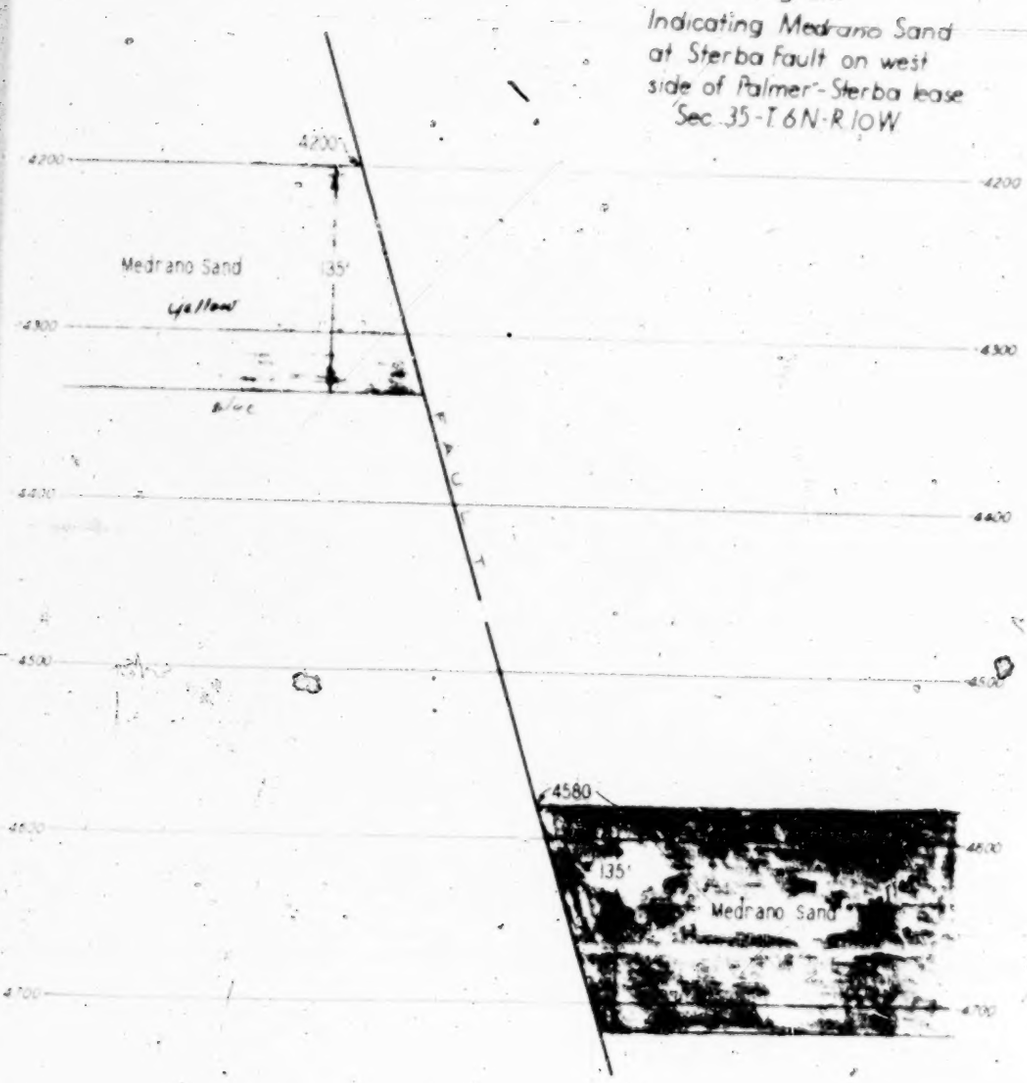


E-5014

1505

EXHIBIT 67

Diagram
Indicating Medrano Sand
at Sterba Fault on west
side of Palmer-Sterba lease
Sec 35-T 6N-R 10W



P. 1506

R 10 W.

Sheet 1 of 1

EXHIBIT 72

WEST CEMENT - MEDRANO POOL

BASE MAP

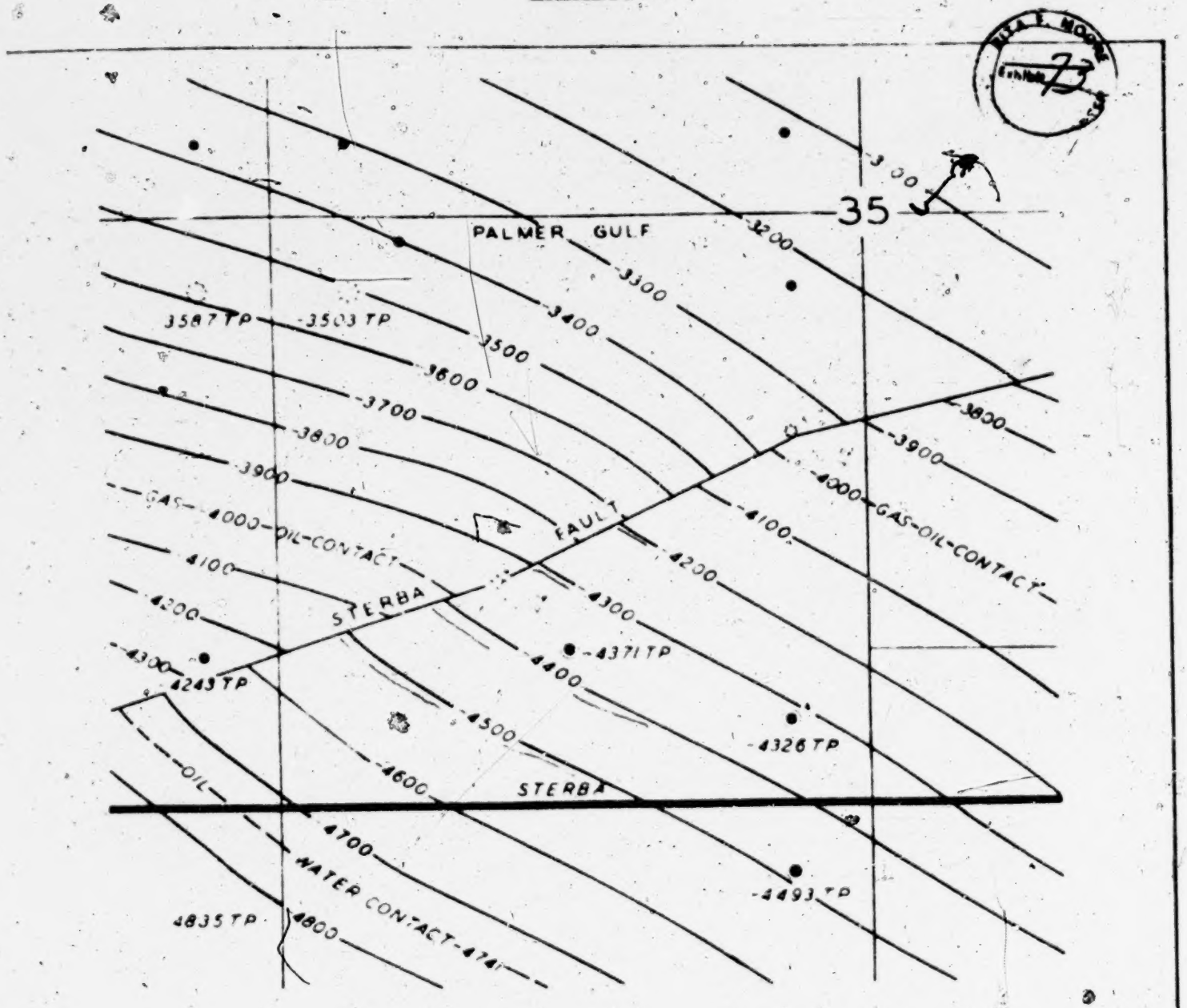
SCALE 1" = 1 MILE

Exhibit 72

I 72

209

EXHIBIT 73



MAP OF
SOUTHWEST QUARTER OF SEC 35 T6N R10W
PERTAINING TO A PORTION OF
WEST CEMENT MEDRANO UNIT
BY
COMMITTEE OF GEOLOGISTS
STRUCTURAL GEOLOGICAL MAP
DATUM- TOP OF THE MEDRANO SAND
CONTOUR INTERVAL- 100 FEET
SCALE
0 200 400 1000 2000 2640 FT
100 300 500

-4300TP SUB SEA DATUM ON THE TOP OF THE MEDRANO SAND

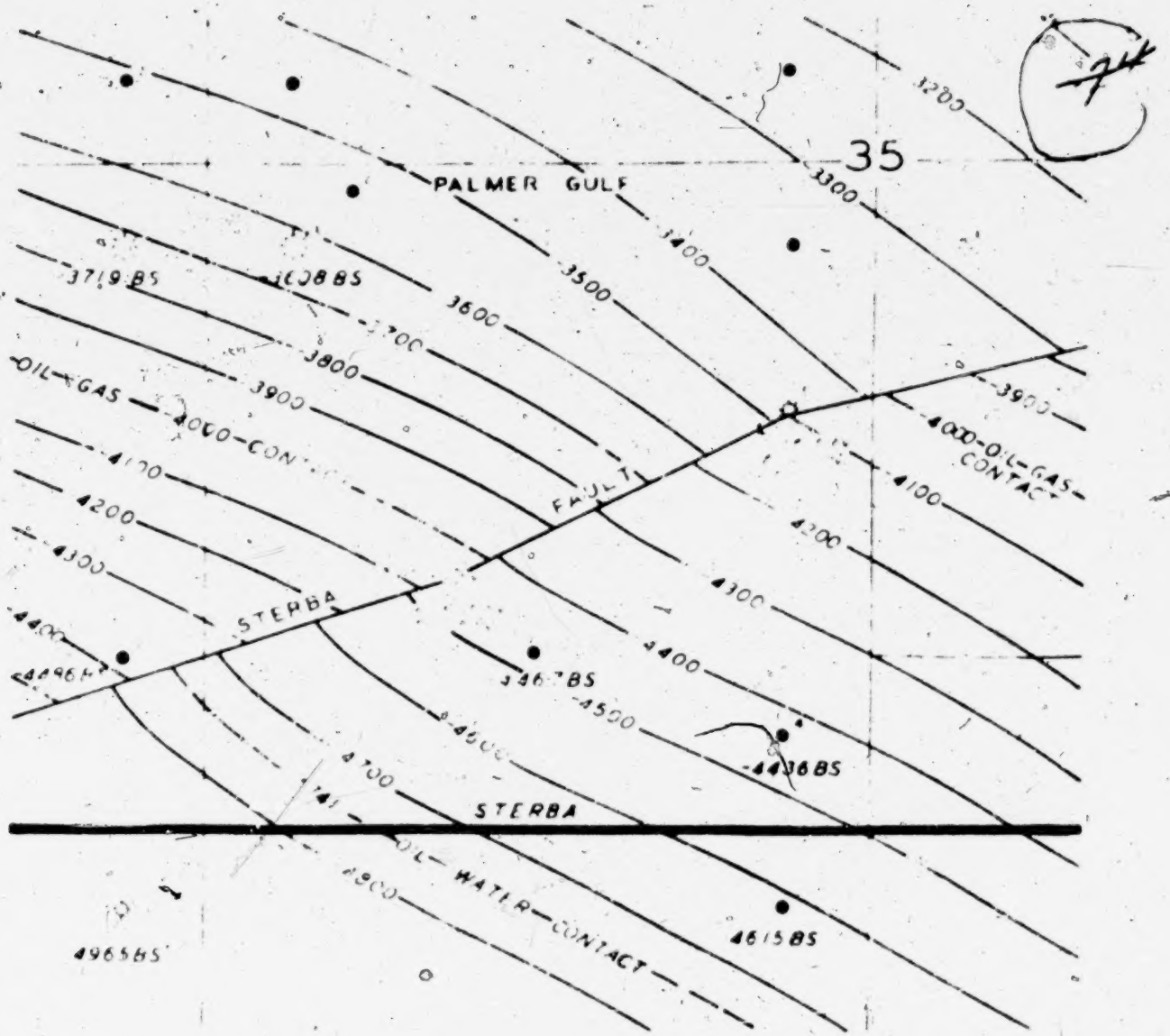
DATE - MAY 29, 1947

COMMITTEE OF GEOLOGISTS

J LAWRENCE MUIR -- AMERADA PETROLEUM CORPORATION
A H RICHARDS -- ANDERSON-PRICHARD OIL CORPORATION
J T RICHARDS -- GULF OIL CORPORATION
W L MOREMAN -- MAGNOLIA PETROLEUM COMPANY
A J MONTGOMERY -- PHILLIPS PETROLEUM COMPANY
R A WALLACE -- STEPHENS PET CO & RAY STEPHENS INC

1508

EXHIBT 74



MAP OF
SOUTHWEST QUARTER OF SEC 35 T6N R10W
PERTAINING TO A PORTION OF
WEST CEMENT MEDRANO UNIT
BY
COMMITTEE OF GEOLOGISTS
STRUCTURAL GEOLOGICAL MAP
DATUM - BASE OF THE MEDRANO SAND
CONTOUR INTERVAL -100 FEET
SCALE

0 200 400 1000 2000 2640 FT
100 300 500

DATE - MAY 29, 1947

◉ -4375 BS SUB-SEA DATUM ON THE TOP OF THE MEDRANO SAND

COMMITTEE OF GEOLOGISTS

J LAWRENCE MUIR -- AMERADA PETROLEUM CORPORATION
A H RICHARDS -- ANDERSON-PRICHARD OIL CORPORATION
J T RICHARDS -- GULF OIL CORPORATION
W L MOREMAN -- MAGNOLIA PETROLEUM COMPANY
A J MONTGOMERY -- PHILLIPS PETROLEUM COMPANY
P A WALLACE -- STEPHENS-PET CO & RAY STEPHENS INC

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Exhibit 79

MAP SHOWING BOTTOM HOLE PRESSURE IN JONES SAND POOL
SCHULER FIELD
LIBERTY COUNTY
ARK.

DATE 1-21-42
AREALLY WEIGHTED AVG. PRESS. 1496.6
VOLUMETRICALLY " " " 1497.7

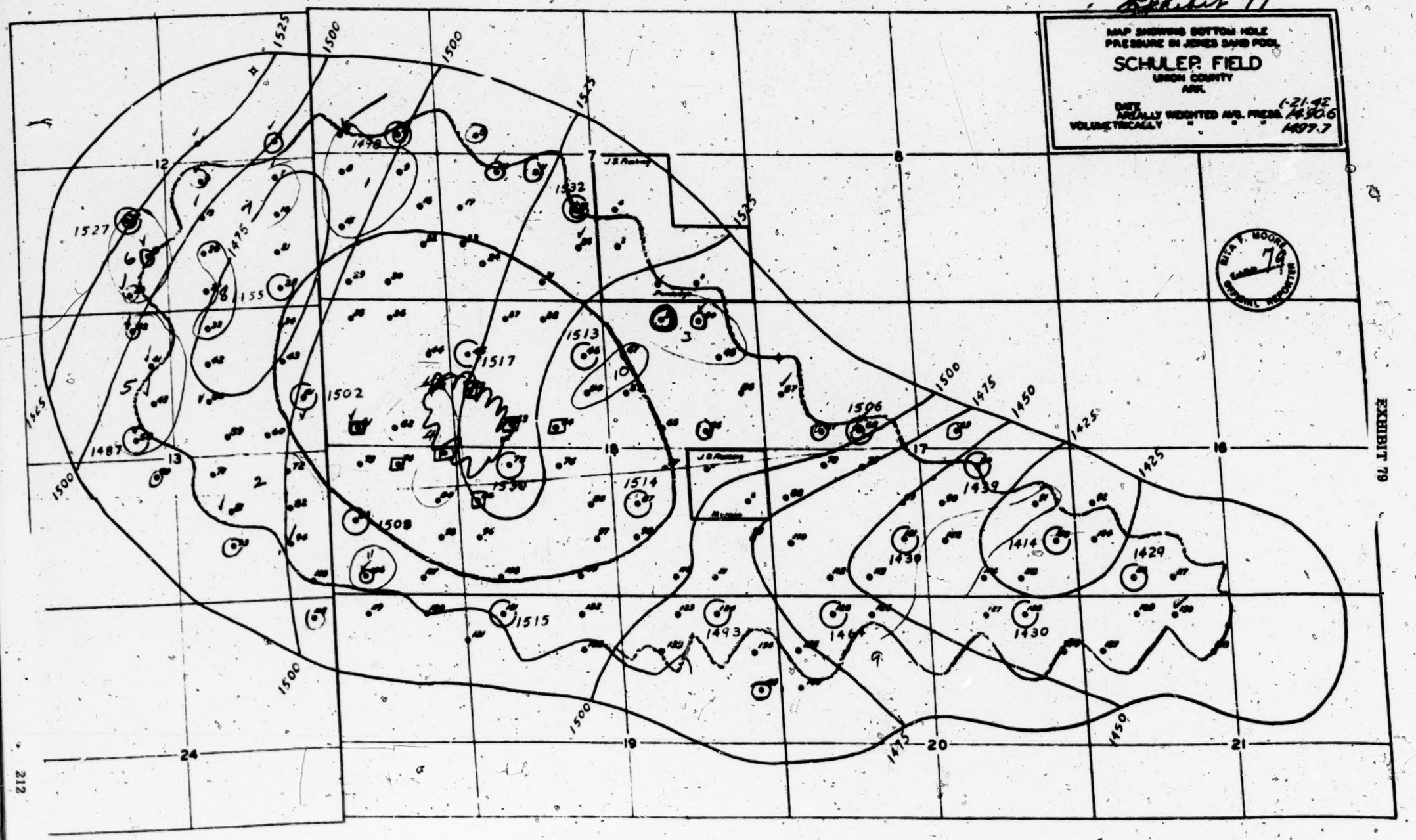
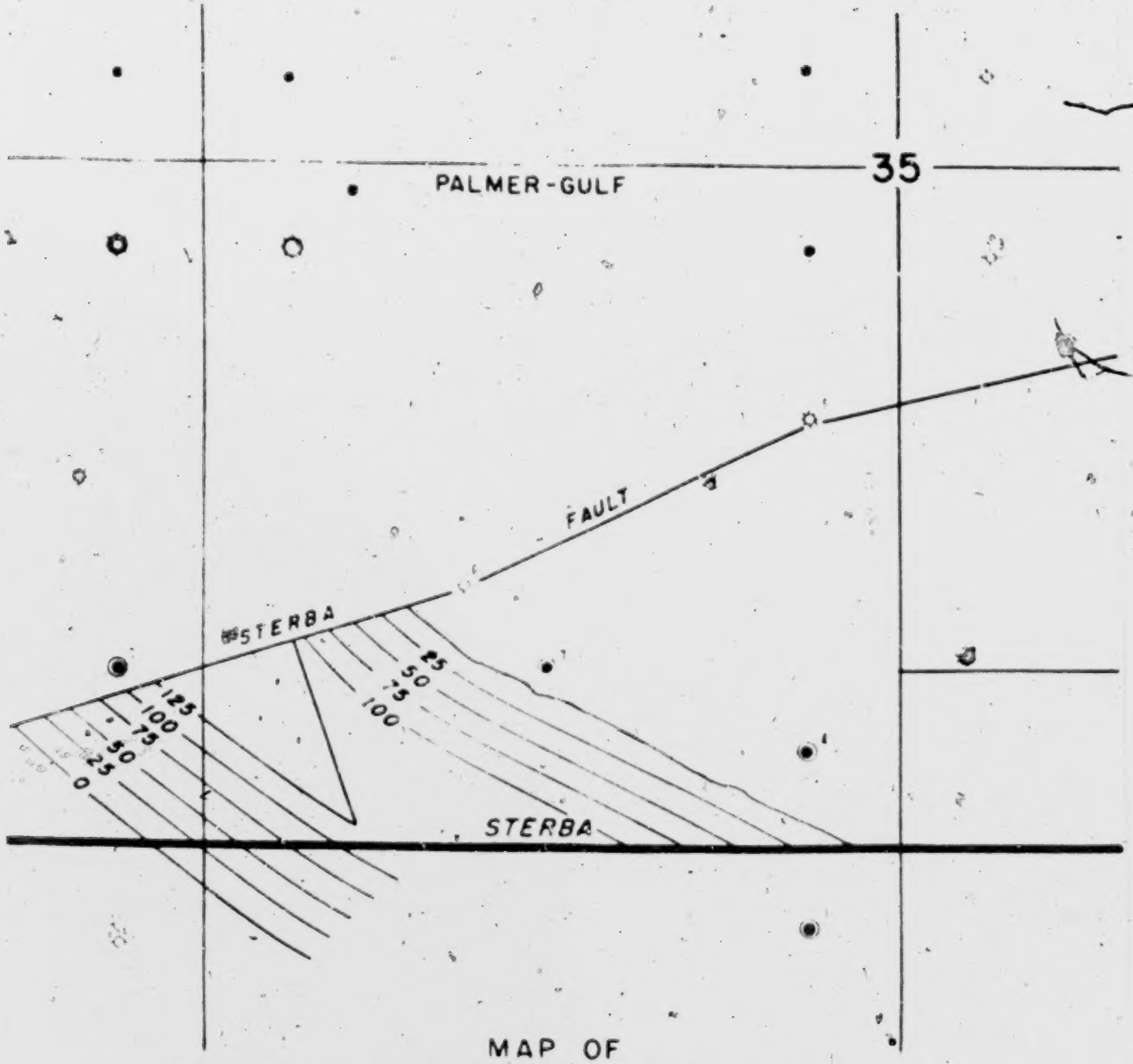


EXHIBIT 79

212

EXHIBIT 79

1510



MAP OF
SOUTHWEST QUARTER OF SEC 35 T 6N R 10W
CADDO COUNTY, OKLA
PERTAINING TO THE MEDRANO SAND
BY J P MCKEE — CONSULTING GEOLOGIST
ISOPACHOUS MAP
SHOWING
THICKNESS OF NET MEDRANO OIL SAND
BELOW A DEPTH OF 6000 FEET FROM SURFACE

SCALE

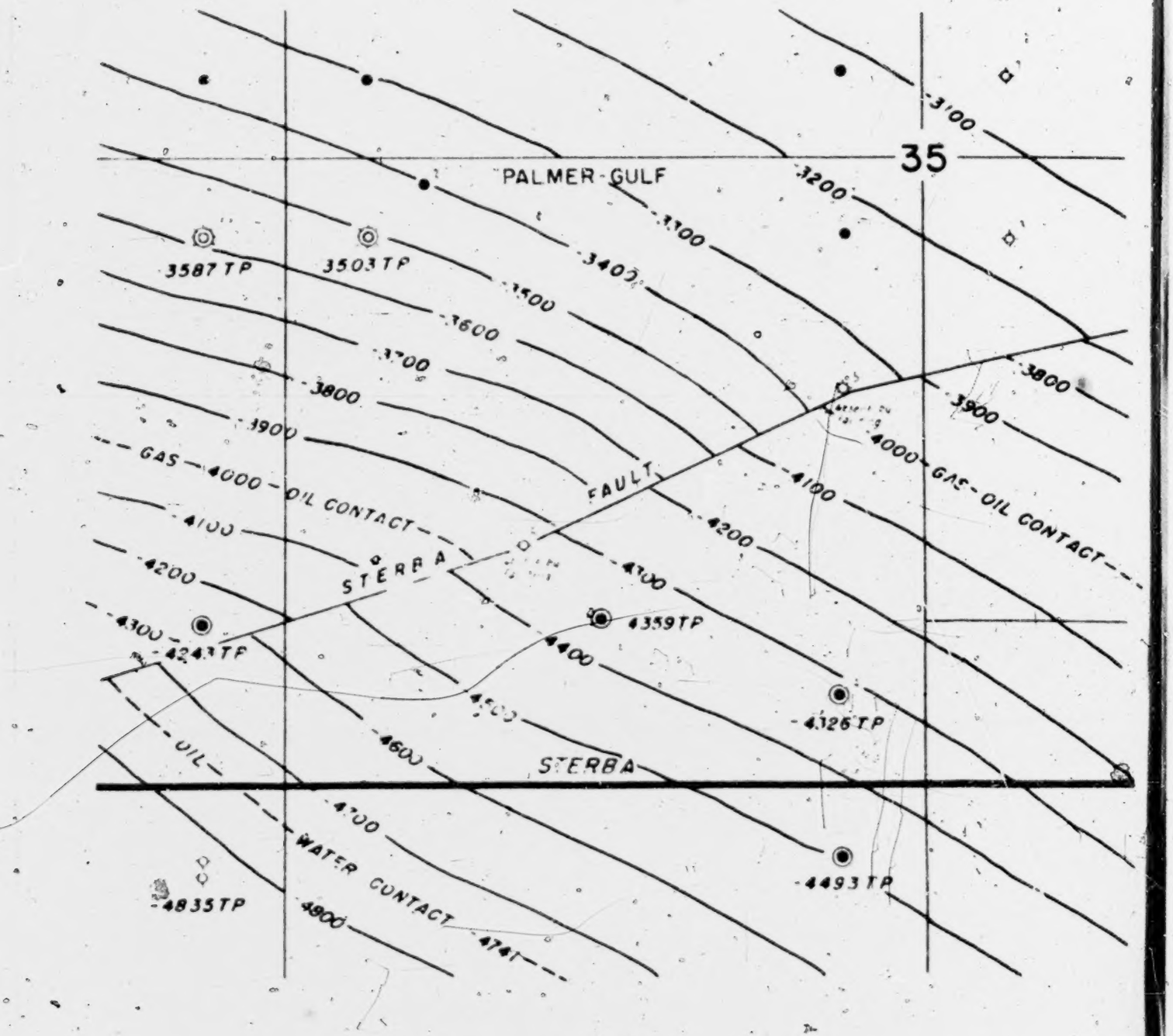
0 200 400 1000 2000 2640 FT

100 300 500

JUNE 19 1947

21DA

EXHIBIT 81



MAP OF
SOUTHWEST QUARTER OF SEC. 35 T. 6N. R. 10W.
CADDO COUNTY, OKLA.
PERTAINING TO THE MEDRANO SAND
BY J. P. MCKEE—CONSULTING GEOLOGIST
STRUCTURAL GEOLOGICAL MAP

DATUM: TOP OF MEDRANO SAND

SCALE
0 200 400 1000 2000 2640 FT.
100 300 500

JUNE 19 1947

R-10-W.

approximate contact gas to oil from surface

29 27 26 25

32 33 34 35 36

3 2

34

1/4

EXHIBIT A
MAP OF
WEST CEMENT MEDRANO UNIT
SCALE 4 IN. = 1 MILE

LEGEND
OUTLINE OF UNIT
MEDRANO SD. OIL WELL ⊙
MEDRANO SD. GAS WELL ⊙
OTHER OIL WELLS •
OTHER GAS WELLS •
TRACT NO. THUS ( )

EXHIBIT 81

R-9-W.

surface crew original

25 30 29 28

36 31 32 33

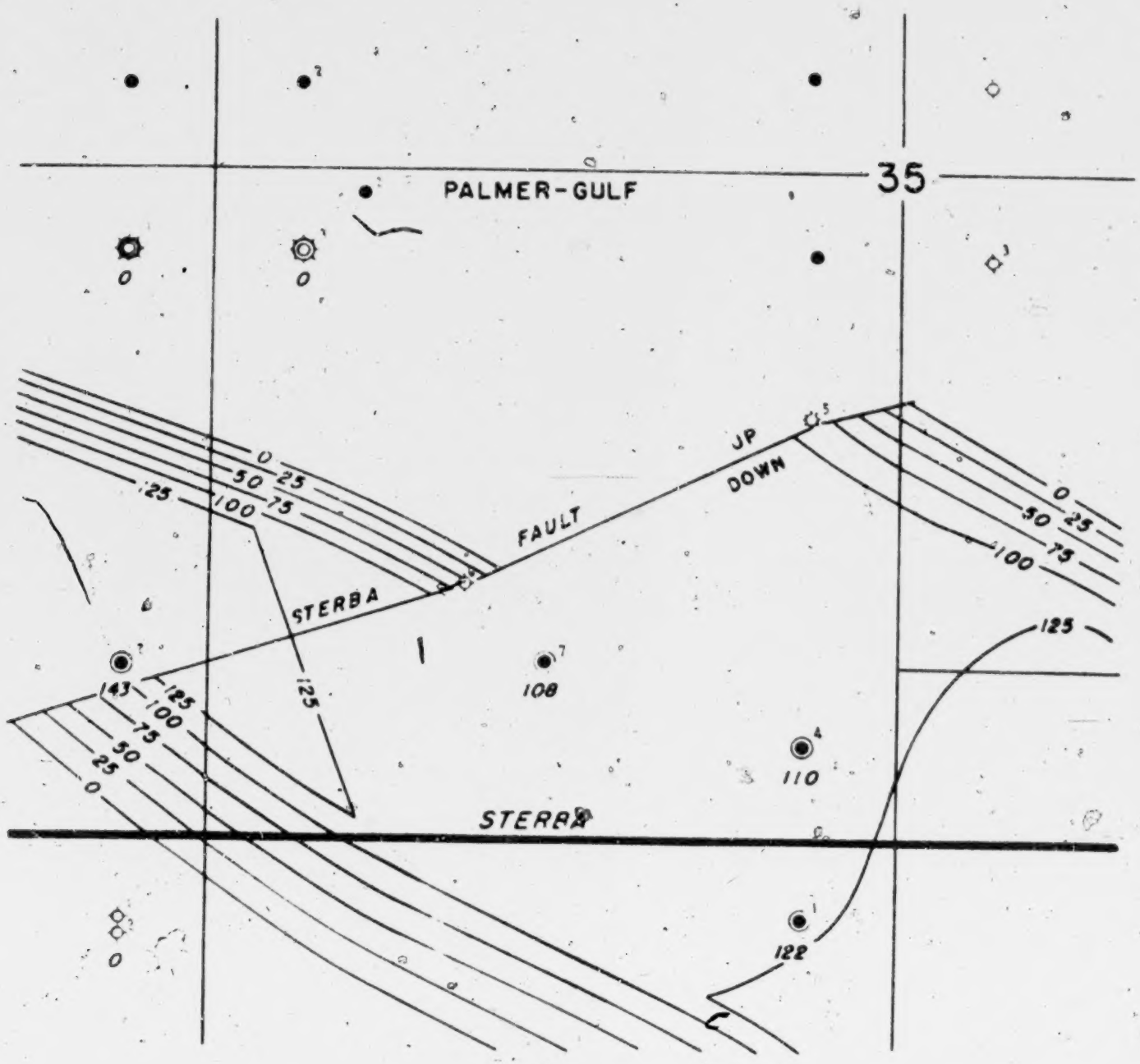
6 5 4

T 6 N.

T 5 N.

EXHIBIT 82

1513

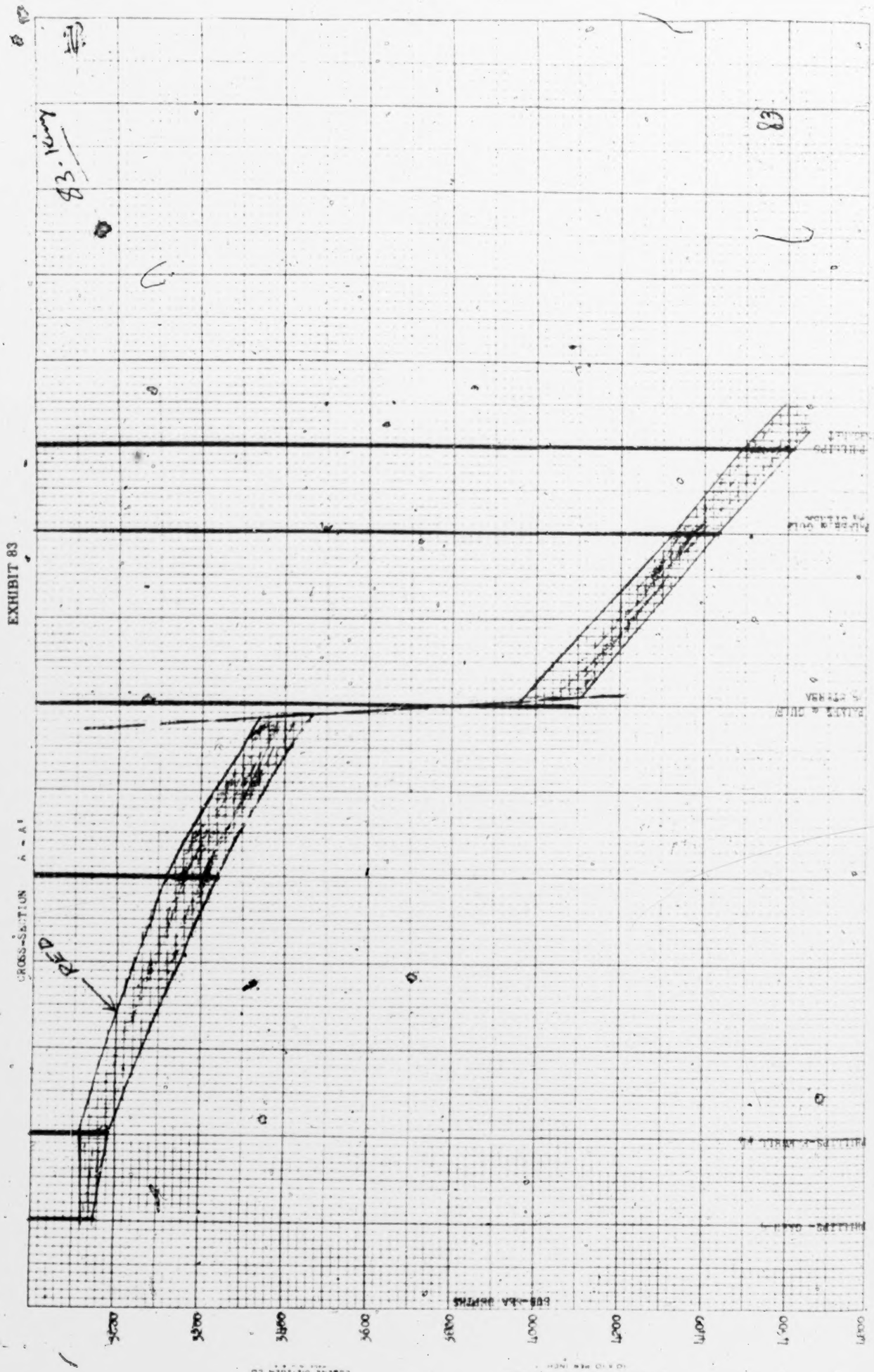


MAP OF
SOUTHWEST QUARTER OF SEC. 35 T. 6N. R. 10W.
CADDO COUNTY, OKLA
PERTAINING TO THE MEDRANO SAND
BY J. P. MCKEE — CONSULTING GEOLOGIST
ISOPACHOUS MAP
SHOWING
THICKNESS OF NET MEDRANO OIL SAND

SCALE
0 200 400 1000 2000 2640 FT.
100 300 500

JUNE 19 1947

1514



[fol. 216]

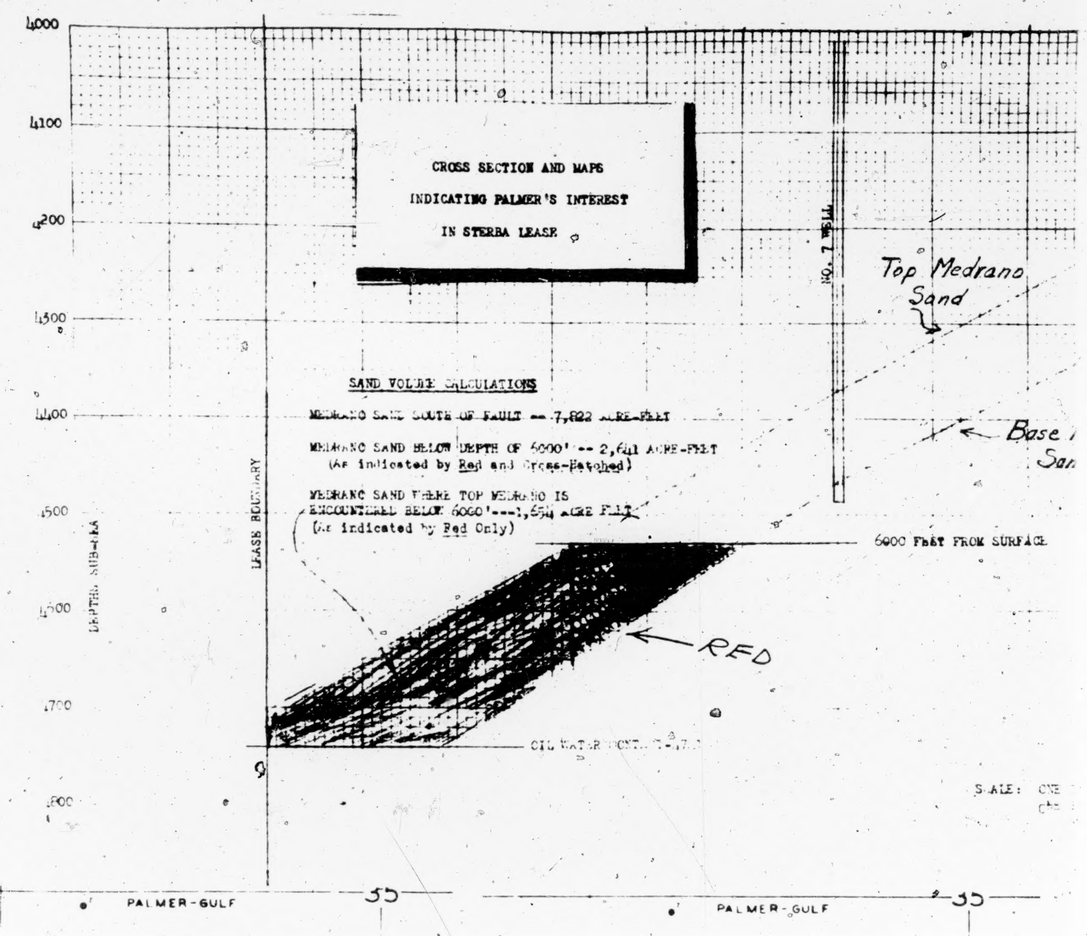
EXHIBIT 83

Tract Number	Name	Interest
Number 3	Kit C. Farwell	40/160 ths.
Number 6	Frank Pfohlemann	All interest—160/160 ths.
Number 14	Jane A. Jones (Mrs. E. W. Jones)	16/160 ths.
	Mabel E. McKirk (Formerly Mabel E. Sherritt)	26.60/160 ths.
Number 15	Amerlia Beemer	All interest—40/40 ths.
Number 16	Kit C. Farwell	1/2 interest—50/50 ths.
Number 17	Kit C. Farwell	1/2 interest—40/40 ths.
Number 19	Florence M. Plummer	32/160 ths.
	Hazel A. Plummer	32/160 ths.
	Virgie M. Updegrove	32/160 ths.
	Thomas O. Plummer	32/160 ths.
Number 20	Florence M. Plummer	32/160 ths.
	Hazel A. Plummer	32/160 ths.
	Virgie M. Updegrove	32/160 ths.
	Thomas O. Plummer	32/160 ths.
Number 26	Otis (I. O.) Oaks	120/160 ths.
Number 27	Elizabeth Paine	5/160 ths.
Number 28	Kit C. Farwell	3/8 ths.
	Chas. T. Williams	5/160 ths.
Number 29	Chas. T. Williams	5/160 ths.
Number 32	Regina Schlitt (23 1/3 acres)	23 1/3 /160 ths.
	Ben P. Butler (20 acres)	20/160 ths.
	Ben P. Holland (33 1/3 acres)	33 1/3 /160 ths.
	T. J. Butler (20 acres)	20/160 ths.
	James A. Holland (23 /13 acres)	23 1/3 /160 ths.
Number 34	Nettie Melton & Fannie McDowell	11/72 int. each
Number 35	Nettie Melton & Fannie McDowell	11/72 int. each
Number 36	Nettie Melton & Fannie McDowell	11/72 int. each
Number 37	Nettie Melton & Fannie McDowell	11/72 int. each
Number 38	J. P. McKenna	10/160 ths.
	J. S. Smith	38/160 ths.
Number 40 & 41	Eva I. Pierson	3/9 ths.
	Ernest S. Pierson	1/9 th.
	Etta J. Mead	1/9 th.
	Ella Pierson Price	1/9 th.
	Clarence M. Pierson	1/9 th.
	Richard E. Pierson	1/9 th.
	Minne E. P. Mooney	1/9 th.
Number 44	L. L. Edwards (13 1/3 acres)	40/240 ths.
	T. G. Gann (2 1/2 acres)	5/160 ths.
	M. M. Davis (9 1/3 acres)	28/240 ths.
	J. F. Ball (2 1/2 acres)	5/160 ths.

[fol. 217]

EXHIBIT 83—Continued

Tract Number	Name	Interest
Number 45	Grace E. Niles (16 2/3 acres)	50/480 ths.
	Eva Parker, nee Niles (13 1/3 acres)	40/480 ths.
	J. D. Davis (10 acres)	10/160 ths.
	Lucy E. Davis (10 acres)	10/160 ths.
	M. M. Davis (10 acres)	10/160 ths.
Number 46	Oza Medrano (26 2/3 acres)	80/480 ths.
	Oza Medrano, Guardian (26 2/3 acres)	80/480 ths.
Number 47 & 48	Lewis L. Edwards	40/80 ths.
Number 49	L. L. Edwards (13 1/3 acres)	13 1/3 /40 ths.
	Jasper Edwards (4.444 acres)	4.444/40 ths.
	Ted R. Edwards (4.444 acres)	4.444/40 ths.
	Josophens Welch (4.444 acres)	4.444/40 ths.
	Clinton Edwards (4.444 acres)	4.444/40 ths.
	Jessie Mullinax (4.444 acres)	4.444/40 ths.
	Opal Coon (4.444 acres)	4.444/40 ths.
Number 51	E. M. Rowe Estate, by Wayne Rowe, Adm (Mae M. Rowe, Wanne Rowe & Edith Weidge)	all mineral or 120 acres
Number 52	Carrie C. Dixon (2 1/2 acres)	5/16 ths.
	Offie Lindsey	97/1280 ths.
	Grace Maude Lindsey	63/1280 ths.
Number 54	L. A. Davis & Marie M. Davis	all minerals—20/20 ths.
Number 55	L. A. Davis & Marie M. Davis	all minerals except 3/4 of 1/8 royalty, all leasing rights to Davises. (This is subject to existing lease of Rookstool & Butcher) All mineral in place belongs to the Davises.
Number 56 & 57	T. B. Walker	1/2 minerals—20/40 ths.
Number 58	J. F. Ball (8 1/3 acres)	5/48 ths.
Number 60	Mary A. Farris (20 acres)	20/160 ths.
Number 61	Mary A. Farris (20 acres)	20/160 ths.
Number 62	Mary A. Farris (20 acres)	20/160 ths.
Number 63	Mary A. Farris (20 acres)	20/160 ths.
Number 62 & 63	L. N. Davis (60 acres)	60/80 ths.
Number 64 & 65	Winifred M. Prentice, now Graney (40 acres)	1/4 th.
	Eugene L. Prentice (40 acres)	1/4 th.
	Maxine Ruth Prentice (40 acres)	1/4 th.
	John C. Prentice (40 acres)	1/4 th.
Number 66	Carrie C. Dixon (7 1/2 acres)	15/160 ths.
Number 67, 68 69 & 70	Ida B. Rivers	19/160 ths.
	Dorothy McClaran	19/160 ths.
	Max E. McClaran	19/160 ths.
	George A. McClaran	19/160 ths.
	Maurice McClaran	19/160 ths.
Number 57	Bob White Oil Company	5/120 ths.
	Clyde Kahle	5/120 ths.
Number 55	Clyde Kahle	1/8 of 7/8 working interest.



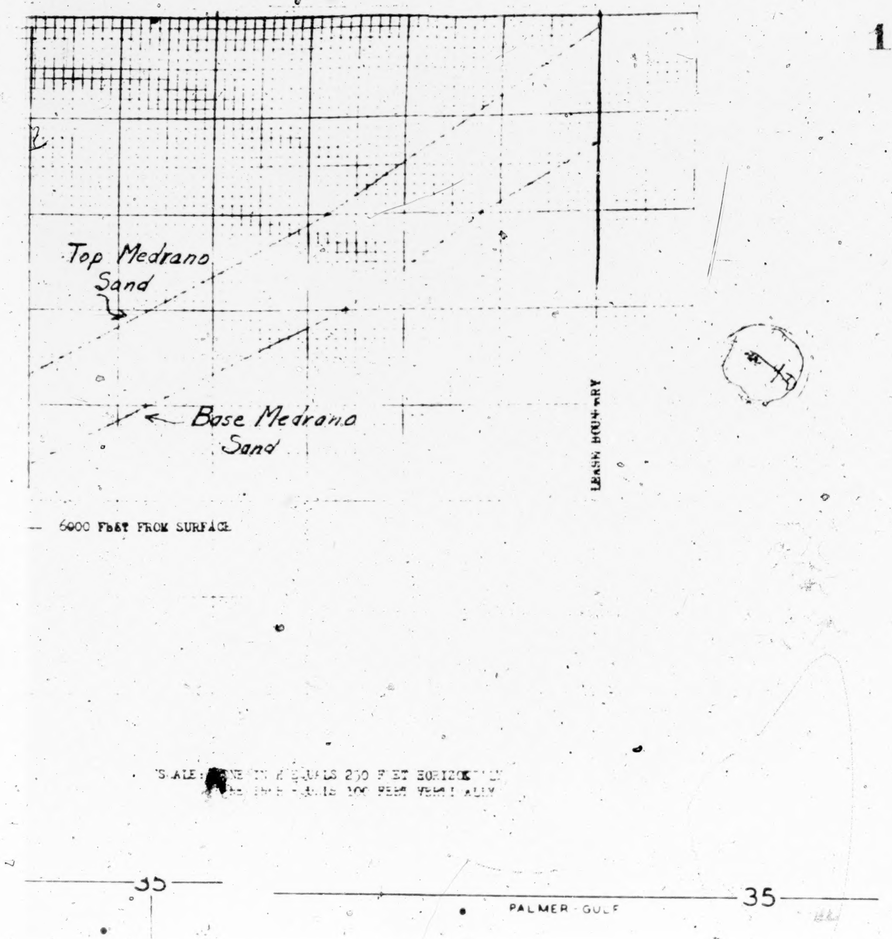
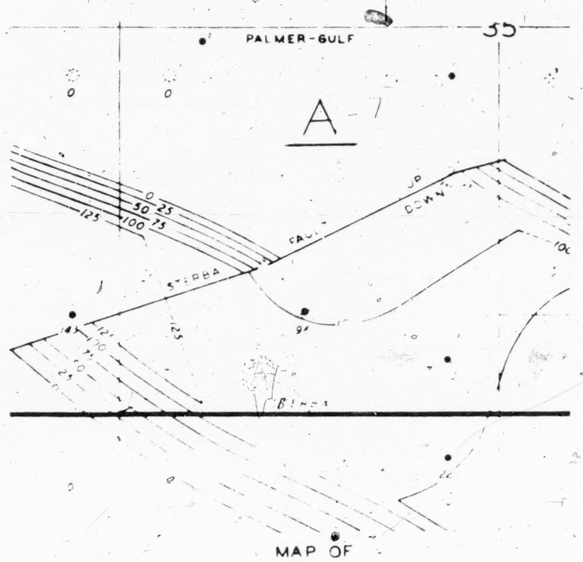
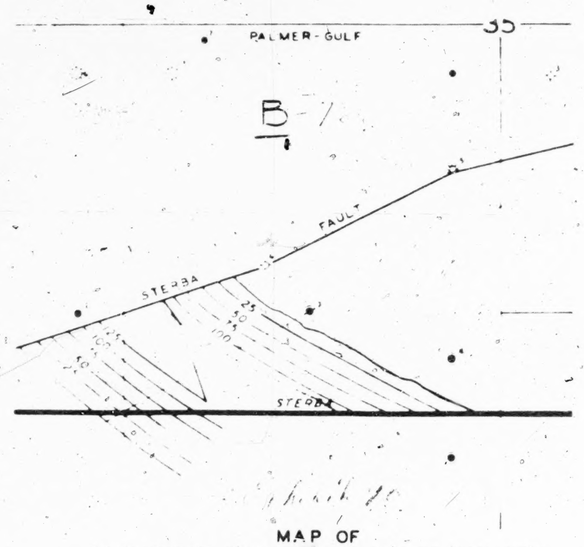


EXHIBIT 90



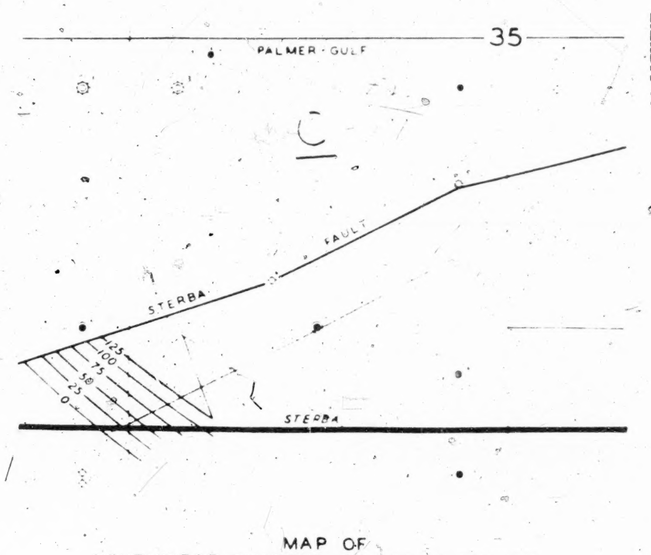
MAP OF
SOUTHWEST QUARTER OF SEC 35 T6N R10W
PERTAINING TO A PORTION OF
WEST CEMENT MEDRANO UNIT
BY
COMMITTEE OF GEOLOGISTS
ISOPACHOUS MAP
SHOWING
THICKNESS OF NET MEDRANO OIL SAND
ISOPACH LINE INTERVAL - 25 FEET
SCALE
0 200 400 1000 2000 2640FT
100 300 500
FIGURE DENOTES THICKNESS OF NET MEDRANO SAND CAPABLE OF PRODUCING OIL
MAY 29 1947
COMMITTEE OF GEOLOGISTS
J LAWRENCE MUIR -- AMERADA PETROLEUM CORPORATION
A H RICHARDS -- ANDERSON PRICHARD OIL CORPORATION
J T RICHARDS -- GULF OIL CORPORATION
W L MOREMAN -- MAGNOLIA PETROLEUM COMPANY
A J MONTGOMERY -- PHILLIPS PETROLEUM COMPANY



MAP OF
SOUTHWEST QUARTER OF SEC. 35 T6N R10W
PERTAINING TO A PORTION OF
WEST CEMENT MEDRANO UNIT
BY
COMMITTEE OF GEOLOGISTS
ISOPACHOUS MAP
SHOWING
THICKNESS OF NET MEDRANO OIL SAND
BELOW A DEPTH OF 6000 FEET FROM SURFACE
ISOPACH LINE INTERVAL - 25 FEET
SCALE
0 200 400 1000 2000 2640FT
100 300 500
DATE - MAY 29, 1947
COMMITTEE OF GEOLOGISTS
J LAWRENCE MUIR -- AMERADA PETROLEUM CORPORATION
A H RICHARDS -- ANDERSON PRICHARD OIL CORPORATION
J T RICHARDS -- GULF OIL CORPORATION
W L MOREMAN -- MAGNOLIA PETROLEUM COMPANY
A J MONTGOMERY -- PHILLIPS PETROLEUM COMPANY



F SEC. 35 T6N R10W
ORTION OF
DRANO UNIT
EOLOGISTS
MAP
RANO OIL SAND
ET FROM SURFACE
- 25 FEET
2000 2640FT
1947
OLOGISTS
ETROLEUM CORPORATION
PRICHARD OIL CORPORATION
ORPORATION
PETROLEUM COMPANY
ETROLEUM COMPANY



MAP OF
SOUTHWEST QUARTER OF SEC 35 T6N 10W
PERTAINING TO A PORTION OF
WEST CEMENT MEDRANO UNIT
BY
COMMITTEE OF GEOLOGISTS
ISOPACHOUS MAP
SHOWING
THICKNESS OF NET MEDRANO OIL SAND
WHERE TOP IS ENCOUNTERED BELOW 6000 FEET FROM SURFACE
ISOPACH LINE INTERVAL - 25 FEET
SCALE
0 200 400 1000 2000 2640FT
100 300 500
DATE - MAY 29 1947
COMMITTEE OF GEOLOGISTS
J LAWRENCE MUIR -- AMERADA PETROLEUM CORPORATION
A H RICHARDS -- ANDERSON-PRICHARD OIL CORPORATION
J T RICHARDS -- GULF OIL CORPORATION
W L MOREMAN -- MAGNOLIA PETROLEUM COMPANY
A J MONTGOMERY -- PHILLIPS PETROLEUM COMPANY

EXHIBIT 90

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PRODUCERS 88 Revised—OKLAHOMA
Form 40 2M 5-39—21518 D

EXHIBIT 26, 1st Instrument

OIL, GAS AND MINERAL LEASE

THIS AGREEMENT made this 17th day of April 1941 between Lucy G.Hartshorn,a widow;Eula M.Thom & Jack B.E.Thom,her husband;Hazel R.Snavely,a widow; Mabel M.Hartshorn,a single person; & Mona F.Baldwin,nee Hartshorn, & Don E.Baldwin,her husband

Lessor (whether one or more), and Phillips Petroleum Company Lessee, WITNESSETH:

1. Lessor in consideration of One and No/100---------- Dollars ($1.00,) in hand paid, of the royalties herein provided, and of the agreements of Lessee herein contained, hereby grants, leases and lets exclusively unto Lessee for the purpose of investigating, exploring, prospecting, drilling and mining for and producing oil, gas and all other minerals, laying pipe lines, building tanks, power stations, telephone lines and other structures thereon to produce, save, take care of, treat, transport and own said products, and housing its employees, the following described land in Caddo County, Oklahoma, to wit:

NE NE (Lots 1 & 2) Section 2-5N-10W,

and containing 80 acres, more or less. In the event a resurvey of said lands shall reveal the existence of excess and/or vacant lands lying adjacent to the lands above described and the lessor, his heirs, or assigns, shall, by virtue of his ownership of the lands above described, have preference right to acquire said excess and/or vacant lands, then in that event this lease shall cover and include all such excess and/or vacant lands which the Lessor, his heirs, or assigns, shall have the preference right to acquire by virtue of his ownership of the lands above described as and when acquired by the lessor; and the lessee shall pay the lessor for such excess and/or vacant lands at the same rate per acre as the cash consideration paid for the acreage hereinabove mentioned.

2. Subject to the other provisions herein contained, this lease shall be for a term of ~~ten (10) years~~ July 27 1946 (called "primary term") and as long thereafter as oil, gas or other mineral is produced from said land hereunder.

3. The royalties to be paid Lessor are: (a) on oil, one-eighth of that produced and saved from said land, the same to be delivered at the wells or to the credit of Lessor into the pipe line to which the wells may be connected; Lessee may from time to time purchase any royalty oil in its possession, paying the market price thereof, prevailing for the field where produced on the date of purchase, (b) on gas, including casinghead gas or other gaseous substance, produced from said land and sold or used off the premises or in the manufacture of gasoline or other product therefrom, the market value at the well of one-eighth of the gas sold or used, provided that on gas sold at the wells the royalty shall be one-eighth of the amount realized from such sale, where gas from a well producing gas only is not sold or used, Lessee may pay as royalty $30.00 per well per year, and upon such payment it will be considered that gas is being produced within the meaning of Paragraph 2 hereof, and (c) all other minerals mined and marketed, one-tenth either in kind or value at the well or mine, at Lessee's election, except that on sulphur the royalty shall be fifty cents (50c) per long ton. Lessor to have gas free of cost from any such well for all stoves and all inside lights in the principal dwelling on said land during the same time, by making lessee's own connections with the well at lessee's own risk and expense. Lessee shall have free use of oil, gas, coal, wood and water from said land, except water from lessor's wells, for all operations hereunder, and the royalty on oil, gas and coal shall be computed after deducting any so used.

4. If operations for drilling are not commenced on said land on or before ~~the first anniversary~~ July 27 1942 this lease shall then terminate as to both parties, unless on or before such ~~anniversary~~ date Lessee shall pay or tender to Lessor or to the credit of Lessor in Anadarko Bank & Trust Company Bank at Anadarko, Oklahoma, (which bank and its successors are Lessor's agent and shall continue as the depository for all rentals payable hereunder regardless of changes in ownership of said land or the rentals) the sum of Eighty and No/100---------- Dollars ($80.00,), (herein called rentals), which shall cover the privilege of deferring commencement of drilling operations for a period of twelve (12) months. In like manner and upon like payments or tenders annually the commencement of drilling operations may be further deferred for successive periods of twelve (12) months each during the primary term. The payment or tender of rental may be made by the check or draft of Lessee mailed or delivered to said bank on or before such date of payment. If such bank (or any successor bank) should fail, liquidate or be succeeded by another bank, or for any reason fail or refuse to accept rental, Lessee shall not be held in default for failure to make such payment or tender of rental until thirty (30) days after Lessor shall deliver to Lessee a proper recordable instrument, naming another bank as agent to receive such payments or tenders. The down cash payment is consideration for this lease according to its terms and shall not be allocated as mere rental for a period. Lessee may at any time execute and deliver to Lessor or to the depository above named or place of record a release or releases covering any portion or portions of the above described premises and thereby surrender this lease as to such portion or portions and be relieved of all obligations as to the acreage surrendered, and thereafter the rentals payable hereunder shall be reduced in the proportion that the acreage covered hereby is reduced by said release or releases.

5. If prior to discovery of oil or gas on said land Lessee should drill a dry hole or holes thereon, or if after discovery of oil or gas the production thereof should cease from any cause, this lease shall not terminate if Lessee commences additional drilling or re-working operations within sixty (60) days thereafter or (if it be within the primary term) commences or resumes the payment or tender of rentals on or before the rental paying date next ensuing after the expiration of three months from date of completion of dry hole or cessation of production. If at the expiration of the primary term oil, gas or other mineral is not being produced on said land but Lessee is then engaged in drilling or re-working operations thereon, the lease shall remain in force so long as operations are prosecuted with no cessation of more than thirty (30) consecutive days, and if they result in the production of oil, gas or other minerals so long thereafter as oil, gas or other mineral is produced from said land.

6. Lessee shall have the right at any time during or after the expiration of this lease to remove all property and fixtures placed by Lessee on said land, including the right to draw and remove all casing without the consent of Lessor. When required by Lessor, Lessee will bury pipe lines below ordinary plow depth.

7. The Lessee agrees to promptly pay to the owner thereof any damages to crops, or improvements, caused by or resulting from any operations of Lessee.

8. The rights of either party hereunder may be assigned in whole or in part and the provisions hereof shall extend to the heirs, successors and assigns, but no change or division in ownership of the land, rentals, or royalties, however accomplished, shall operate to enlarge the obligations or diminish the rights of Lessee. No sale or assignment by Lessor shall be binding on Lessee until Lessee shall be furnished with a certified copy of recorded instrument evidencing same. In event of assignment of this lease as to a segregated portion of said land, the rentals payable hereunder shall be apportionable as between the several leasehold owners ratably according to the surface area of each, and default in rental payment by one shall not affect the rights of other leasehold owners hereunder. If any one or more parties become entitled to royalty hereunder, Lessee may withhold payment thereof unless and until furnished with a recordable instrument executed by all such parties designating an agent to receive payment for all.

9. Lessee is hereby given the right and power to pool or combine the acreage covered by this lease or any portion thereof with other land, lease or leases in the immediate vicinity thereof when, in Lessee's judgment it is necessary or advisable to do so in order properly to develop and operate said premises in compliance with the spacing rules of any lawful authority, or when to do so would, in the judgment of Lessee, promote the conservation of the oil and gas in and under and that may be produced from said premises, such pooling to be into a unit or units not exceeding 40 acres each, except that in cases where it may be necessary or convenient to conform a unit to survey subdivisions such unit may contain not to exceed 41 acres. Lessee shall execute in writing an instrument identifying and describing the pooled acreage. The entire acreage so pooled into a tract or unit shall be treated, for all purposes except the payment of royalties on production from the pooled unit, as if it were included in this lease. If production is found on the pooled acreage, it shall be treated as if production is had from this lease, whether the well or wells be located on the premises covered by this lease or not. In lieu of the royalties elsewhere herein specified, Lessor shall receive on production from a unit so pooled only such portion of the royalty stipulated herein as the amount of his acreage placed in the unit or his royalty interest therein bears to the total acreage so pooled in the particular unit involved. Provided, Lessee shall be under no obligation whatsoever, express or implied, to drill more than one well to each such unitized tract, regardless of whom, where or by whom offset wells may be drilled.

10. The breach by Lessee of any obligation arising hereunder shall not work a forfeiture or termination of this lease nor cause a termination or reversion of the estate created hereby, nor be grounds for cancellation hereof, in whole or in part, save as herein expressly provided. If at any time a dispute shall be determined by judicial ascertainment that Lessee is obligated or required to drill a well or wells upon the leased premises or any area pooled or unitized in accordance with the provisions hereof, Lessee shall have ninety days after such judicial determination within which to commence the drilling of such well or wells.

11. Lessor hereby warrants and agrees to defend the title to said land and agrees that Lessee at its option may discharge any tax, mortgage or other lien upon said land and in event Lessee does so, it shall be subrogated to such lien with the right to enforce same and apply rentals and royalties accruing hereunder toward satisfying same. Without impairment of Lessee's rights under the warranty in event of failure of title, it is agreed that if Lessor owns a less interest in the above described land than the entire undivided fee simple estate therein, then the royalties and rentals to be paid Lessor shall be only in the proportion that his interest bears to the whole and undivided fee.

Witness our hands and seals on this 21st day of April 1941

Lucy G Hartshorn (L.S.)
Eula M Thom (L.S.)
Jack B E Thom (L.S.)
Hazel R Snavely (L.S.)

Mabel M Hartshorn
Mona F Baldwin
Don E Baldwin

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S/2

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1st Instrument to EXHIBIT 26

INDIVIDUAL ACKNOWLEDGMENT

STATE OF OKLAHOMA, COUNTY OF Caddo } ss.

Before me, the undersigned, a Notary Public within and for said County and State, on this 21st day of April, 1941, personally appeared Hazel E. Snively, a widow, Mona F. Baldwin, nee Hartshorn and Don E. Baldwin, her husband

to me known to be the identical person S who executed the within and foregoing instrument, and duly acknowledged to me that they executed the same as their free and voluntary act and deed for the uses, purposes, and consideration therein expressed and set forth.

Given under my hand and seal of office the day and year last above written.

My commission expires February 11, 1945 — Margie Williamson, Notary Public

INDIVIDUAL ACKNOWLEDGMENT

STATE OF OKLAHOMA, COUNTY OF Oklahoma } ss.

Before me, the undersigned, a Notary Public within and for said County and State, on this 21st day of April, 1941, personally appeared Mabel Hartshorn, a single person, Lucy G. Hartshorn, a widow, Eula M. Thom and Jack B. E. Thom, her husband

to me known to be the identical person S who executed the within and foregoing instrument, and duly acknowledged to me that they executed the same as their free and voluntary act and deed for the uses, purposes, and consideration therein expressed and set forth.

Given under my hand and seal of office the day and year last above written.

My commission expires Feb 11, 1945 — Margie Williamson, Notary Public

INDIVIDUAL ACKNOWLEDGMENT

STATE OF OKLAHOMA, COUNTY OF _____ } ss.

Before me, the undersigned, a Notary Public within and for said County and State, on this _____ day of _____, 19___, personally appeared _____

to me known to be the identical person ___ who executed the within and foregoing instrument, and duly acknowledged to me that ___ executed the same as ___ free and voluntary act and deed for the uses, purposes, and consideration therein expressed and set forth.

Given under my hand and seal of office the day and year last above written.

My commission expires _____ Notary Public

Oil, Gas and Mineral Lease

No. 2233

FROM Lucy G. Hartshorn et al

TO Phillips Petroleum Co

Date _____ 19___
Section _____ Township _____ Range _____
Number of Acres _____
County _____
State _____

STATE OF OKLAHOMA, County of Caddo } ss.

I hereby certify that this instrument was filed for record in my office at 8:45 o'clock A. M. May 23 1941 and is duly recorded in book 95 page 231 231

Ernie Cole, Recorder
By Hazel Hunnicutt, Deputy
Fee $2.65

When recorded return to: PHILLIPS PETROLEUM CO. BARTLESVILLE, OKLAHOMA

01-5 R 36 W

Form 9101—Printed in the U.S.A.

Western Bank & Office Supply Co., Stationers, Okla. City

OIL AND GAS LEASE

AGREEMENT, Made and entered into the 4th day of June 1941

by and between Mrs. Margaret F. Holland, a widow,

of Anadarko, Oklahoma, party of the first part, hereinafter called lessor (whether one or more)

and Phillips Petroleum Company party of the second part, hereinafter called lessee.

WITNESSETH, That the said lessor, for and in consideration of One and No/100---------- DOLLARS, cash in hand paid, receipt of which is hereby acknowledged and of the covenants and agreements hereinafter contained on the part of lessee to be paid, kept and performed, has granted, demised, leased and let and by these presents does grant, demise, lease and let unto the said lessee, for the sole and only purpose of mining and operating for oil and gas, and laying pipe lines, and building tanks, powers, stations and structures thereon to produce, save and take care of said products, all that certain tract of land situate in the County of Caddo State of Oklahoma, described as follows, to-wit:

N½ NW¼ (Lots 3 & 4) Section 2-5N-10W,

and containing 80 acres, more or less.

It is agreed that this lease shall remain in force for a term of ending August 5, 1946 and as long thereafter as oil or gas or either of them, is produced from said land by the lessee, or the premises are being developed or operated.

In consideration of the premises the said lessee covenants and agrees:

1st. To deliver to the credit of lessor free of cost, in the pipe line to which he may connect his wells, the equal to one-eighth part of all oil produced and saved from the leased premises.

2d. To pay the lessor one-eighth value of gas from each well where gas only is found, while the same is being used off the premises, and lessor to have gas free of cost from any such well for all stoves and all inside light in the principal dwelling-house on said land during the same time by making his own connections with the wells at his own risk and expense.

3d. To pay lessor for gas produced from any oil well and used off the premises or for the manufacture of casing-head gas one-eighth, at the market price for the gas so used, for the time during which such gas shall be used, said payments to be made Quarterly

If no well be commenced on said land on or before the 6th day of August 1942 this lease shall terminate as to both parties, unless the lessee on or before that date shall pay or tender to the lessor, or to the lessor's credit in the Anadarko Bank and Trust Company Bank at Anadarko, Oklahoma, or its successors, which shall continue as the depository regardless of changes in the ownership of said land, the sum of $80.00 Eighty and No/100---------- DOLLARS, which shall operate as a rental and cover the privilege of deferring the commencement of a well for 12 months from said date. In like manner and upon like payment or tenders the commencement of a well may be further deferred for like period of the same number of months successively. And it is understood and agreed that the consideration first recited herein, the down payment, covers not only the privileges granted to the date when said first rental is payable as aforesaid, but also the lessee's option of extending that period aforesaid, and any and all other rights conferred.

Should the first well drilled on the above described land be a dry hole, then and in that event, if a second well is not commenced on said land within twelve months from the expiration of the last rental period which rental has been paid, this lease shall terminate as to both parties, unless the lessee on or before the expiration of said twelve months shall resume the payment of rentals in the same amount and in the same manner as hereinbefore provided. And it is agreed that upon the resumption of the payment of rentals, as above provided that the last preceding paragraph hereof, governing the payment of rentals and the effect thereof, shall continue in force just as though there had been no interruption in the rental payments.

If said lessor owns a less interest in the above described land than the entire and undivided fee simple estate therein, then the royalties and rentals herein provided shall be paid the lessor only in the proportion which his interests bears to the whole and undivided fee.

Lessee shall have the right to use, free of cost, gas, oil and water produced on said land for its operations thereon, except water from wells of lessor.

When requested by lessor, lessee shall bury its pipe lines below plow depth.

No well shall be drilled nearer than 200 feet to the house or barn now on said premises, without the written consent of the lessor.

Lessee shall pay for damages caused by its operations to growing crops on said land.

Lessee shall have the right at any time to remove all machinery and fixtures placed on said premises, including the right to draw and remove casing.

If the estate of either party hereto is assigned, and the privilege of assigning in whole or in part is expressly allowed—the covenants hereof shall extend to their heirs, executors, administrators, successors or assigns, but no change in the ownership of the land or assignment of rentals or royalties shall be binding on the lessee until after the lessee has been furnished with a written transfer or assignment or a true copy thereof, and it is hereby agreed that in this event this lease shall be assigned as to a part or as to parts of the above described lands and the assignee or assigns of such part or parts shall fail or make default in the payment of the proportionate part of the rents due from him or them, such default shall not operate to defeat or affect this lease in so far as it covers a part or parts of said lands upon which the said lessee or any assignee thereof shall make due payment of said rental.

Lessor hereby warrants and agrees to defend the title to the lands herein described, and agrees that the lessee shall have the right at any time to redeem for lessor, by payment, any mortgages, taxes or other liens on the above described lands, in the event of default of payment by lessor, and be subrogated to the rights of the holder thereof, and lessor hereby agrees that any such payments made by the lessee for the lessor shall be deducted from any amounts of money which may become due the lessor under the terms of this lease.

In Testimony Whereof We Sign, this the 9th day of June 1941

Witness:

Mrs Margaret F Holland (Seal)

(Seal)

(Seal)

(Seal)

The name was written by me at his request and in his presence.

STATE OF OKLAHOMA, } ss:
County of Caddo }

ACKNOWLEDGMENT TO THE LEASE

BE IT REMEMBERED, That on this 9th day of June, in the year of our Lord, one thousand nine hundred and forty-one, before me, a Notary Public in and for said County and State, personally appeared Margaret P. Holland and _____ to be known to be the identical person who executed the within and foregoing instrument and acknowledged to me that she executed the same as her free and voluntary act and deed for the uses and purposes therein set forth.

In Witness Whereof, I have hereunto set my official signature and affixed my notarial seal the day and year first above written.

My Commission Expires 10-26-42

Roy Hawkins
Notary Public

ASSIGNMENT

KNOW ALL MEN BY THESE PRESENTS:

That _____ of _____ State of _____ the within named grant___ in consideration of the sum of _____ Dollars, to _____ in hand paid, the receipt whereof is hereby acknowledged, do ___ hereby sell, assign, transfer, set over and convey unto _____ heirs, and assigns, the within grant.

TO HAVE AND TO HOLD THE SAME FOREVER, subject nevertheless, to the conditions therein contained.

In Witness Whereof, The said grant___ ha___ hereunto set ___ hand ___ this _____ day of _____ 19___

STATE OF OKLAHOMA, } ss:
County of _____ }

ACKNOWLEDGMENT OF ASSIGNMENT

On this ___ day of _____, A. D. 19___, before me, the undersigned, Notary Public in and for the County and State aforesaid, personally appeared _____ to me known to be the identical person___ who executed the within and foregoing instrument and acknowledged to me that ___ executed the same as ___ free and voluntary act and deed for the uses and purposes therein set forth.

WITNESS my hand and official seal.

My Commission Expires _____

Notary Public

OIL AND GAS LEASE

FROM Mrs. Margaret P. Holland

TO Continental Petroleum Corporation

Dated _____ 19___

Section ___ Township ___ Range ___

No. of Acres ___ County, Okla.

Term ___

STATE OF Oklahoma } ss:
County }

This instrument was filed for record on the 23 day of June 1941 at 8 o'clock A. M., and duly recorded in Book 77 Page 599 of the records of this office.

Kate Case
Register of Deeds—Clerk

By Jane Strawser
Deputy Clerk

Fee $1.75

STATE OF OKLAHOMA, } ss:
County of _____ }

ACKNOWLEDGMENT WHERE LESSOR SIGNS BY MARK

On this ___ day of _____ A. D. 19___, before me, the undersigned, a Notary Public in and for the County and State aforesaid, personally appeared _____ and _____ to me known to be the identical person___ who executed the within and foregoing instrument by ___ mark ___ and in my presence and in the presence of _____ as witnesses, and acknowledged to me that ___ executed the same as ___ free and voluntary act and deed for the uses and purposes therein set forth.

Given under my hand and seal of office the day and year last above written.

My Commission Expires _____

Notary Public

Note — The signature by mark of a lessor who cannot write his name must be witnessed by two witnesses, one of whom must write lessor's name near such mark.

1523

Jacob Roessler 29,673 EXHIBIT 32 30867

Printed in USA

OIL AND GAS LEASE

COLLECTION as SPECIAL T.C.P. N.B.T.U.S.A. Okla. Prods. Tulsa, Okla.

Agreement, Made and entered into the 12th day of February, 1936 by and between Paul Sterba and wife Gertrude K. Sterba, and Helen Catherine Jackson, nee Sterba, and husband Clifford Jackson, of Kay County & Canadian County, Oklahoma hereinafter called lessor (whether one or more), and Chris Pearson hereinafter called lessee:

Witnesseth: That the said lessor, for and in consideration of One & 00/100 Dollars, cash in hand paid, the receipt of which is hereby acknowledged, and of the covenants and agreements hereinafter contained on part of lessee to be paid, kept and performed, has granted, demised, leased and let and by these presents does grant, demise, lease and let unto the said lessee for the sole and only purpose of mining and operating for oil and gas and of laying of pipe lines, and of building tanks, powers, stations and structures thereon to produce, save and take care of said products, all that certain tract of land situate in the County of Caddo State of Oklahoma described as follows, to-wit:

the southwest quarter

of Section 35 Township 6N Range 10W and containing 160 acres, more or less.

It is agreed that this lease shall remain in force for a term of five years from this date, and as long thereafter as oil or gas or either of them is produced from said land by lessee.

In consideration of the premises the said lessee covenants and agrees:

1st. To deliver to the credit of lessor, free of cost, in the pipe line to which lessee may connect wells on said land, the equal one-eighth part of all oil produced and saved from the leased premises.

2nd. To pay lessor one-eighth (⅛) of the gross proceeds each year, payable quarterly, for the gas from each well where gas only is found, while the same is being used off the premises, and if used in the manufacture of gasoline a royalty of one-eighth (⅛), payable monthly at the prevailing market rate for gas; and lessor to have gas free of cost from any such well for all stoves and all inside lights in the principal dwelling on said land during the same time, by making lessor's own connections with the well at lessor's own risk and expense.

3rd. To pay lessor for gas produced from any oil well and used off the premises or in the manufacture of gasoline or any other product a royalty of one-eighth (⅛) of the proceeds, at the mouth of the well, payable monthly at the prevailing market rate.

If no well be commenced on said land on or before the 12th day of February, 1937, this lease shall terminate as to both parties, unless the lessee shall on or before that date pay or tender to the lessor or to the lessor's credit in the The Security Bank at Ponca City, Okla., or its successors, which shall continue as the depository regardless of changes in the ownership of said land, the sum of One hundred sixty & 00/00 Dollars, which shall operate as a rental and cover the privilege of deferring the commencement of a well for twelve months from said date. The payment herein referred to may be made in currency, draft, or check at the option of the lessee; and the depositing of such currency, draft or check in any post office, with sufficient postage and properly addressed to the lessor, or said bank, on or before said last mentioned date, shall be deemed payment as herein provided. In like manner and upon like payments or tenders, the commencement of a well may be further deferred for like periods of the same number of months successively. And it is understood and agreed that the consideration first recited herein, the down payment, covers not only the privilege granted to the date when said first rental is payable as aforesaid, but also the lessee's option of extending that period as aforesaid, and any and all other rights conferred.

Should the first well drilled on the above described land be a dry hole, then, and in that event, if a second well is not commenced on said land within twelve months from the expiration of the last rental period for which rental has been paid, this lease shall terminate as to both parties, unless the lessee on or before the expiration of said twelve months shall resume the payment of rentals, in the same amount and in the same manner as hereinbefore provided. And it is agreed that upon the resumption of the payment of rentals as above provided, that the last preceding paragraph hereof governing the payment of rentals and the effect thereof, shall continue in force just as though there had been no interruption in the rental payments, and if the lessee shall commence to drill a well within the term of this lease or any extension thereof, the lessee shall have the right to drill such well to completion with reasonable diligence and dispatch, and if oil or gas, or either of them, be found in paying quantities, this lease shall continue and be in force with like effect as if such well had been completed within the term of years first mentioned.

If said lessor owns a less interest in the above described land than the entire and undivided fee simple estate therein, then the royalties and rentals herein provided for shall be paid the said lessor only in the proportion which lessor's interest bears to the whole and undivided fee.

Lessee shall have the right to use, free of cost, gas, oil and water produced on said land for lessee's operations thereon, except water from the wells of lessor.

When requested by lessor, lessee shall bury lessee's pipe lines below plow depth.

No well shall be drilled nearer than 200 feet to the house or barn now on said premises without written consent of lessor.

Lessee shall pay for damages caused by lessee's operations to growing crops on said land.

Lessee shall have the right at any time to remove all machinery and fixtures placed on said premises, including the right to draw and remove casing.

If the estate of either party hereto is assigned—and the privilege of assigning in whole or in part is expressly allowed—the covenants shall extend to their heirs, executors, administrators, successors or assigns, but no change in the ownership of the land or assignments of rental or royalties shall be binding on the lessee until after the lessee has been furnished with a written transfer or assignment or a true copy thereof; and it is hereby agreed that in the event this lease is assigned as to a part or as to parts of the above described lands and the assignee or assignees of such part or parts shall fail or make default in the payment of the proportionate part of the rents due from him or them, such default shall not operate to defeat or affect this lease in so far as it covers a part or parts of said lands upon which the said lessee or any assignee thereof shall make due payment of said rental, and this lease shall never be forfeited for non-payment of any rental due until after at least ten days written notice by registered mail or in person shall have been given the lessee.

Lessor hereby warrants and agrees to defend the title to the lands herein described, and agrees that the lessee shall have the right at any time to redeem for lessor, by payment, any mortgages, taxes or other liens on the above described lands, in the event of default of payment by lessor, and be subrogated to the rights of the holder thereof, and the undersigned lessors, for themselves and their heirs, successors, and assigns, hereby surrender and release all right of dower and homestead in the premises described herein, insofar as said right of dower and homestead may in any way affect the purposes for which this lease is made, as recited herein.

IN TESTIMONY WHEREOF WE SIGN. This the 12th day of February, 1936

Witnesses:

Helen Catherine Jackson

Clifford Jackson

Paul Sterba

Gertrude K. Sterba

Rental Book ✓
Abstract Book
Acreage Record ✓
Expiration Record ✓
Well Map Plat Book ✓
Checked With This Lease
By EC 8-28-36

1524

STATE OF Oklahoma } ss.
COUNTY OF Canadian }

ACKNOWLEDGMENT. Applicable where lands are in Oklahoma Kansas, Nebraska, South Dakota, Arizona and New Mexico.

BE IT REMEMBERED, That on this 14th. day of February A. D. 1936, before me, a Notary Public in and for said County and State, personally appeared Helen Catherin Jackson, n.e Sterba, and Clifford Jackson, her husband

to me known to be the identical person described in and who executed the within and foregoing instrument and acknowledged to me that they executed the same as their free and voluntary act and deed for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my official signature and affixed my notarial seal, the day and year first above written.

My commission expires January 2nd., 1938 Notary Public

STATE OF } ss.
COUNTY OF }

ACKNOWLEDGMENT. CORPORATION

said County and State, on this day of

name of the maker thereof, to the foregoing instrument as

STATE OF Oklahoma.)
: ss.
COUNTY OF Kay.)

Before me, the undersigned, a Notary Public within and for said County and State, on this 3 day of February, 193 6, personally appeared Paul Sterba and wife and Gertrude C. Sterba to me known to be the identical person s who executed the within and foregoing instrument, and acknowledged to me that he executed the same as their free and voluntary act and deed for the uses and purposes therein set forth.

In testimony whereof I have hereunto set my hand and official seal the day and year last above written.

My Commission Expires
Feb 14, 1936

Notary Public

No. 540 Producers 88 T.O.P.

OIL & GAS LEASE

FROM Helen Catherine Jackson Et. Al.

TO Chris Pearson

STATE OF Okla
County of Caddo } ss

Dated 19
Lot Block Addition
Section Township Range
County
No. of Acres Term

This instrument was filed for record on the 26 day of Feb. 1936 at 11:00 o'clock A.M. and duly recorded in Book 75 Page 316 of the records of this office.

By P. D. Goodsell Deputy
Court Clerk Register of Deeds

When Recorded Return to Chris Pearson

Dept. 1936 Printed by THE OKLAHOMA PRINTING COMPANY Oklahoma City, Okla. Dial Phone CEDAR 2-2121 Producers' Record Blank Series of 1936 Printed in U.S.A. Copyright 1936 by The Oklahoma Printing Company

LAND DEPARTMENT OKLAHOMA.

ORLAHOMA FORM OF ACKNOWLEDGMENT WHERE GRANTOR SIGNS BY MARK

NOTE—with reference to Oklahoma lands, when the instrument is signed by a person who cannot write his name he shall execute the same by his mark and his name shall be written near such mark by one of the persons who saw such mark made who shall write their names on such instrument as witnesses

STATE OF }
COUNTY OF } ss

On this day of A.D. 19 before me, the undersigned, a Notary Public in and for the County and State aforesaid, personally appeared

and to me known to be the identical person who executed the within and foregoing instrument by mark in my presence and in the presence of

and as witnesses, the said signing the name of the said and acknowledged to me that executed the same as free and voluntary act and deed for the uses and purposes therein set forth.

Given under my hand and seal the day and year last above written.

My commission expires Notary Public

1525

EXHIBIT 33

ASSIGNMENT OF OIL AND GAS LEASE

Know All Men by These Presents

That the undersigned, Chris Pearson

(hereinafter called Assignor), for and in consideration of One Dollar ($1.00) the receipt whereof is hereby acknowledged, does hereby sell, assign, transfer and set over unto GULF OIL CORPORATION OF PENNSYLVANIA, A CORPORATION,

(hereinafter called Assignee), all interest in and to the oil and gas lease dated February 12, 1936 from, Paul Sterba and Wife Gertrude K. Sterba, and Helen Catherin Jackson, Nee Sterba, and Husband Clifford Jackson

to Chris Pearson, lessee, recorded in book ____, page ____, in so far as said lease covers the following described land in Caddo County, State of Oklahoma:

the southwest quarter of section thirty-five, township six north and range ten west

together with the rights incident thereto and the personal property thereon, appurtenant thereto, or used or obtained in connection therewith.

And for the same consideration the Assignor covenants with the Assignee, its or his heirs, successors or assigns: That the Assignor is the lawful owner of and has good title to the interest above assigned in and to said lease, estate, rights and property, free and clear from all liens, encumbrances or adverse claims; That said lease is a valid and subsisting lease on the land above described, and all rentals and royalties due thereunder have been paid and all conditions necessary to keep the same in full force have been duly performed; and that the Assignor will warrant and forever defend the same against all persons whomsoever, lawfully claiming or to claim the same.

EXECUTED, This 15th. day of February 19 36

Chris Pearson

ACKNOWLEDGMENT FOR INDIVIDUAL (Oklahoma and Kansas)

STATE OF Oklahoma }
COUNTY OF Tulsa } SS.

Before me, the undersigned, a Notary Public within and for said County and State, on this 15th. day of February, 19 36, personally appeared Chris Pearson to me well known to be the identical person who executed the within and foregoing instrument, and duly acknowledged to me that he executed the same as his free and voluntary act and deed for the uses and purposes therein set forth.

In testimony whereof I have hereunto set my hand and official seal the day and year last above written.

My Commission expires Dec 31 1937

K. B. Kress
Notary Public

ACKNOWLEDGMENT FOR CORPORATION

STATE OF ____ }
COUNTY OF ____ } SS

Before me, the undersigned, a Notary Public within and for said County and State, on this ____ day of ____, 19 ____, personally appeared ____ to me known to be the identical person who subscribed the name of the maker thereof to the foregoing instrument as its ____ president, and duly acknowledged to me that he executed the same as the free and voluntary act and deed of such corporation, for the uses and purposes therein set forth.

In testimony whereof I have hereunto set my hand and official seal the day and year last above written.

My Commission expires ____ Notary Public

Recorded Book ____ Page ____
Abstract Book ____ Page ____
Acreage Record ____
Transfer Record ____
Survey Map ____ Plat Book ____
Well Log ____
By ____

1526

541

35-6-10

Assignment of Oil & Gas Lease

Chris Pearson

To

Gulf Oil Corporation of Pennsylvania

STATE OF OKLAHOMA, }
CADDO COUNTY } SS.

This instrument was filed for record on the 26 day of Feb. A.D. 1936 at 11:15 o'clock A.M. and duly recorded in book 75 Page 319 of Miscl records.

Fee $1.00 R. L. GOODFELLOW, County Clerk.

By L. H. Wagner Deputy

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GULF OIL CORPORATION OF PENNSYLVANIA
BOX 661

[fol. 227] EXHIBIT 35

12-1-1938 Jacob Roessler Lease No. 29,873 RGL.W

Assignment

This Assignment, made in duplicate, this 6th day of December, 1938, between Gulf Oil Corporation, a Pennsylvania corporation, with offices at Tulsa, Oklahoma, hereinafter referred to as "Gulf, first party, and The Palmer Oil Corporation, of Wichita, Kansas, second party," hereinafter called "Palmer",

Witnesseth That

Whereas, Gulf is the owner and holder of an oil and gas mining lease dated February 12, 1936, executed by Paul Sterba and wife, Gertrude K. Sterba, and Helen Catherine Jackson, nee Sterba, and husband, Clifford Jackson, as lessors, to Chris Pearson, as lessee, covering the Southwest quarter of Section 35, Township 6 North, Range 10 West, Caddo County, Oklahoma, filed for record in the office of the County Clerk of Caddo County, Oklahoma on February 26, 1936 at eleven o'clock A. M. and duly recorded in Book 75 at page 316; and,

Whereas, on the 6th day of September, 1938 a contract was entered into between Gulf Oil Corporation as first party and The Palmer Oil Corporation as second party by the terms of which Gulf was to assign the lease to Palmer, hereinabove referred to, to the depth of 6,000 feet, retaining and reserving the oil and gas mining lease as to all oil, gas and other minerals below the depth of 6,000 feet, together with an overriding royalty; and,

Whereas, Palmer has complied with the contract in so far as to entitle it to an assignment of the lease in accordance with the terms of the contract;

Now, therefore, in consideration of the premises, Gulf hereby sells, assigns, transfers and sets over to Palmer, without covenants of warranty, all of its right, title and interest in and to the above described lease to the depth of 6,000 feet, retaining the lease as to the oil, gas and casing-[fol. 228] head gas, together with all the rights, privileges and appurtenances thereunto belonging, below the depth of 6,000 feet.

To have and to hold the same, subject to all the covenants, conditions and provisions in said lease contained.

Gulf hereby reserves and retains the lease as to the oil, gas and casinghead gas below the depth of 6,000 feet, together with an overriding royalty of 1/16th of the 7/8ths working interest in the oil produced from the leased premises when the total daily production from the leased premises is fifty (50) barrels or less, per day, and 1/8th of the 7/8ths working interest in the oil produced, saved and marketed from the premises when the total daily production from the leased premises exceeds fifty (50) barrels per day, also reserving and retaining an overriding royalty of 1/8th of the 7/8ths working interest in the gas and casinghead gas produced, saved and marketed or taken off the premises, which overriding royalty shall be paid in the following manner, to-wit:

Palmer agrees to run the oil produced, saved and marketed from the premises to the pipe line, or pipe lines, to which it may connect the well, or wells, under division orders placing to the credit of Gulf 1/16th of the 7/8ths working interest in the oil produced, saved and marketed from the premises, when the total gross oil produced from the leased premises is fifty (50) barrels, or less, per day, and 1/8th of the 7/8ths working interest in the oil produced, saved and marketed from the premises during the time the total gross oil produced, saved and marketed from the premises exceeds fifty (50) barrels per day, and to pay Gulf 1/8th of the proceeds of the 7/8ths working interest in the gas and casinghead gas produced, saved and marketed from the premises, payment to be made on the 20th day of each month for the gas and casinghead gas produced and sold from the premises, or used off the premises, during the preceding month. The overriding royalty hereinabove shall be in addition to the royalty provided in the lease and payable to the lessors or their assigns.

The daily production shall be ascertained and determined, for the purposes of this contract, by taking the gross pipe line runs for the month and dividing into the same the number of days in such month, and the quotient shall be considered the total daily production from the leased premises for such month. If the test well comes into production

[fol. 229] after the first of any month, the daily production for such month shall be ascertained and determined by taking the pipe line runs for the number of days the oil is run for such month and dividing into the same the number of such days, and the quotient shall be the daily production for such month for such portion of the month.

8. Palmer agrees to furnish Gulf copies of daily run tickets, to be mailed to Gulf Oil Corporation, P. O. Box 661, Tulsa, Oklahoma, once each week, enclosing the daily run tickets for the preceding week, and, at the close of the month and as soon as obtainable, production tickets for the entire month. Palmer further agrees to furnish Gulf copies of all tank tables.

9. Palmer promises and agrees to produce and market each month the total allowable production for such month and if for any reason Palmer fails, neglects or refuses to produce and market such allowable, Palmer shall promptly advise Gulf, in writing, furnishing in detail the reasons for not producing and running the allowable for such month.

This Assignment is made subject to contract of September 6th, 1938 between Gulf Oil Corporation, first party, and The Palmer Oil Corporation, second party, which contract is hereby referred to and made a part hereof, the same as if herein copied in full.

It is further agreed that any assignment by Palmer shall by reference incorporate the contract of September 6, 1938 as a part thereof and specifically provide for the payment of the overriding royalty to Gulf.

Dated the day and date first above written.

Gulf Oil Corporation, By Rush Greenslade, Vice-President. The Palmer Oil Corporation, By Tom Palmer, President.

Attest: D. B. Catterlin, Assistant Secretary.
Attest: Otto H. Schnepel, Secretary.

[fol. 230] State of Oklahoma,
County of Tulsa, ss.:

Before me, the undersigned, a Notary Public in and for said County and State, on this 15th day of December, 1938, personally appeared Rush Greenslade, to me known to be

the identical person who subscribed the name of the Maker thereof, Gulf Oil Corporation, to the foregoing instrument as its Vice-President, and acknowledged to me that he executed it as his free and voluntary act and deed and as the free and voluntary act and deed of such corporation, for the uses and purposes therein set forth.

Witness my hand and seal, the day and year last above written.

E. B. Benton, Notary Public.

My Commission expires Dec. 17; 1938.

State of Kansas,
County of Sedgwick, ss.:

Before me, the undersigned, a Notary Public in and for said County and State, on this 6th day of December, 1938, personally appeared Tom Palmer, to me known to be the identical person who subscribed the name of the Maker thereof, The Palmer Oil Corporation, to the foregoing instrument as its President, and acknowledged to me that he executed it as his free and voluntary act and deed and as the free and voluntary act and deed of such corporation, for the uses and purposes therein set forth.

Witness my hand and seal, the day and year last above written.

Jewell Thompson, Notary Public.

My Commission expires March 3, 1941.

[fol. 231] In the Supreme Court of the United States,
October Term, 1951

[Title omitted]

Stipulation Covering Printing of Record, Hearing, and Presentation of Cases—Filed September 18, 1951

For the purpose of avoiding the printing of duplicate and unnecessary records in the appeals of the above entitled cases, the convenience of briefing, and in order to expedite and facilitate the consideration thereof by the Court, all

parties Appellants and Appellees in the above entitled causes desire to and do hereby jointly request the Court, pursuant to this Stipulation, to order that the record be printed and said cases briefed, heard and presented upon the following terms:

First: That a single record be printed for use in both cases embodying that part of the record in each case as the parties designate by this Stipulation and that forty (40) copies of such record be printed for the use of the Court and the parties.

Second: That the cases be consolidated for the purpose of filing briefs and for argument and be heard together, except that any of the several parties shall have the right to file separate briefs should they so desire.

Third: That Appellants collectively and Appellees collectively each be allowed a minimum of two (2) hours for argument, which the parties agree is essential to a fair and adequate presentation of the two appeals.

[fol. 232] Fourth: That the following parts of the record should be printed by the Clerk of the Supreme Court of the United States:

A. All of the one volume Transcript of Record certified August 16, 1951, by Andy Payne, Clerk of the Supreme Court of Oklahoma.

B. All of Volume 1 of the Original Records containing 503 pages, filed October 18, 1947, including Petition in Error of The Palmer Oil Corporation, Petition in Error of Tom Potter, Petition in Error of Kit C. Farwell, et al., Petition in Error of Clyde Kahle and Maud Kahle, his wife, and Bob White Oil & Gas Company, and Petition in Error of B. E. Johnson, et al., *except the following portions thereof:*

That part of the Plan of Unitization (between pages 6 and 7 of said Volume) consisting of the Index and pages 1 to 25, inclusive, pages 27 and 28, and Exhibits "A", "B-II", and "C", for the reason that said parts of said Plan and the Exhibits referred to are the same as said Plan and Exhibits attached as Appendix "E" of the Jurisdictional Statement of The Palmer Oil Corporation, Paul Sterba and Paul Sterba, Jr., and Exhibit "B" of Jurisdictional Statement of Kit C. Farwell, et al., the only differences being

certain amendments which will be clearly reflected by printing only page 26 of the Plan, Exhibit "B-I", and Exhibit "D", as contained in said Volume 1 of Original Records.

C. All of Volume 2 of the Original Records, pages 504 to 1026, inclusive.

D. All of Volume 3 of the Original Records, pages 1026(a) to 1459, inclusive.

E. All of Volume 4, of the Original Records, pages 1460 to 1867, inclusive.

F. All of Original Records, Volume 1 of Exhibits, *except the following portions thereof:*

1. Exhibit 74, being well log on Gregory #1.
2. Exhibit 93, being article in The Anadarko Daily News dated September 17, 1939.
3. Exhibit 94, being an article in The Chickasha Daily Express, dated September 7, 1938.

[fol. 233] 4. Exhibit 104, being Application before the Corporation Commission of Oklahoma showing medrano sand of the West Cement Field.

5. Exhibit 105, being Order on Application.
6. Exhibit 106, not offered in evidence.
7. Exhibit 111, being article in The Petroleum Engineer, dated August, 1944.
8. Exhibit 112, not offered in evidence.
9. Exhibit 114, being Geological Report on West Cement Field May 1, 1919.
10. Exhibit 115, being old map of West Cement Field.
11. Exhibit 118, being N. T. Plummer lease dated April 1, 1939.
12. Exhibit 119, being Assignment of said lease.

G. Only those Exhibits or parts thereof contained in Original Records, Volume 2 of Exhibits, as follows:

1. Exhibit 25, being West Cement Cross Section A-A.
2. Exhibit 34, being photostatic copy of Contract between Gulf Oil Corporation and The Palmer Oil Corporation.
3. Exhibit 53 as to the following parts only:

(a) Sheets 1 and 2 of Table 1, West Cement Medrano Unit Value of Recoverable Oil & Gas Oil at $1.52 per barrel, and gas at $0.05 MCF.

(b) Pages 1 and 2, Table 2, West Cement Medrano Unit percentage of interest in Unit.

(c) Page 1, Table 3, West Cement Medrano Unit, Current Income.

4. Exhibit 53 R as to the following parts only:

(a) Sheets 1 and 2 of Table 1, West Cement Medrano Unit, Value of Recoverable Oil and Gas.

(b) Pages 1 and 2, West Cement Medrano Unit, Percentage of Interest in Unit, Table 2.

(c) Page 2, Table 4, West Cement Medrano Unit, Average Daily Current Income.

5. Exhibit 54, Map of West Cement Medrano Unit by Committee of Geologists being Structural Geological Map Datum Top of the Medrano Sand.

[fol. 234] 6. Exhibit 54 R, Map of West Cement Medrano Unit by Committee of Geologists being Structural Geological Map Datum Top of the Medrano Sand.

7. Exhibit 55, Map of West Cement Medrano Unit by Committee of Geologists, Structural Geological Map Datum Base of Medrano Sand.

8. Exhibit 55 R, Map of West Cement Medrano Unit by Committee of Geologists, Structural Geological Map Datum Base of Medrano Sand.

9. Exhibit 56, Map of West Cement Medrano Unit by Committee of Geologists, Isopachous Map showing Thickness of Net Medrano Gas Sand.

10. Exhibit 56 R, Map of West Cement Medrano Unit by Committee of Geologists, Isopachous Map showing Thickness of Net Medrano Gas Sand.

11. Exhibit 57, Map of West Cement Medrano Unit by Committee of Geologists, Isopachous Map showing Thickness of Net Medrano Oil Sand.

12. Exhibit 57 R, Map of West Cement Unit by Committee of Geologists, Isopachous Map showing Thickness of Net Medrano Oil Sand.

13. Exhibit 65, Diagram Indicating Medrano Sand at Sterba Fault on East side of Magnolia-Cement-Henley Lease, Sec. 35-T. 6 N. R. 10W.

14. Exhibit 66, Diagram Indicating Medrano Sand at Sterba Fault on East side of Palmer-Sterba Lease, Sec. 35, T. 6N. R. 10W.

15. Exhibit 67, Diagram indicating Medrano Sand at Sterba Fault on West side of Palmer-Sterba Lease, Sec. 35-T. 6 N. R. 10W.

16. Exhibit 72, West Cement-Medrano Pool Base Map, Isobaric Map.

17. Exhibit 73, Map of Southwest Quarter of Section 35, Township 6 North, Range 10 West, by Committee of Geologists, Structural Geological Map, Datum-Top of Medrano Sand.

18. Exhibit 74, Map of Southwest Quarter of Section 35, Township 6 North, Range 10 West, by Committee of Geologists, Structural Geological Map, Datum-Base of Medrano Sand.

19. Exhibit 79, Map of Southwest Quarter of Section 35, Township 6 North, Range 10 West, by J. P. McKee, Isopachous Map showing Thickness of Net Medrano Oil Sand below a depth of 6000 feet.

20. Exhibit 81, Map of Southwest Quarter of Section 35, Township 6 North, Range 10 West, by J. P. McKee, Structural Geological Map, datum Top of Medrano Sand.

[fol. 235] 21. Exhibit 82, Map of Southwest Quarter of Section 35, Township 6 North, Range 10 West, by J. P. McKee, Isopachous Map showing thickness of Net Medrano Oil Sand.

22. Exhibit 83, showing Tract number, name and interest of certain land and mineral owners.

23. Exhibit 90, Composite Exhibit showing Cross-Section and Isopachous Maps Exhibits 75, 76, and 77 on the SW¼ Sec. 35, T. 6 N.-R. 10W.

H. Only those Exhibits or parts thereof contained in Original Records, Volume 3 of Exhibits, as follows:

1. Photostatic copy of oil and gas lease dated April 17, 1941, running from Lucy G. Hartshorn, a widow; Eula M. Thom and Jack B. E. Thom, her husband; Hazel R. Snavely, a widow; Mabel M. Hartshorn, a single person; and Mona F. Baldwin, nee Hartshorn and Don E. Baldwin, her husband, as lessors, to Phillips Petroleum Company, recorded Book 95, page 231, in the office of the Register of Deeds of Caddo County, Oklahoma, covering the North Half of the Northeast Quarter of Section 2, Township 5 North, Range 10

West, in said County and State, being the first instrument attached to Exhibit 26.

2. Photostatic copy of oil and gas lease dated April 17, 1941, running from Mrs. Margaret F. Holland, a widow, as lessor, to Phillips Petroleum Company, as lessee, recorded in book 72, page 597, in the office of the Register of Deeds of Caddo County, Oklahoma, covering the North Half of the Northwest Quarter (Lots 3 and 4), Section 2, Township 5 North, Range 10 West, in said County and State, being the twelfth instrument attached to Exhibit 26.

3. Exhibit 32, being photostatic copy of oil and gas lease from Paul Sterba and Gertrude K. Sterba, his wife; Helen Catherine Jackson, nee Sterba, and Clifford Jackson, her husband, as lessors, to Chris Pearson, as lessee, recorded in Book 75, page 316, in the office of the Register of Deeds of Caddo County, Oklahoma, covering the Southwest Quarter of Section 35, Township 6 North, Range 10 West, in said County and State.

4. Exhibit 33, being photostatic copy of Assignment of said oil and gas lease dated February 15, 1936, from Chris [fol. 236] Pearson to Gulf Oil Corporation, recorded Book 75, page 319, in the office of the Register of Deeds of Caddo County, Oklahoma.

5. Exhibit 35, being photostatic copy of assignment of said oil and gas lease from Gulf Oil Corporation to The Palmer Oil Company, dated December 6, 1938.

It is stipulated that the oil and gas leases referred to under H-1, 2 and 3 above, are representative in form and provisions of each of the approximately seventy-two leases involved in the unitization of the Medrano Sand of the West Cement Field.

Dated this 7th day of September, 1951.

The Palmer Oil Corporation, Paul Sterba and Paul Sterba, Jr., Appellants in Case No. 301, by Mark H. Adams, One of Their Attorneys. Kit C. Farwell and All Other Appellants in Case No. 302, by Reford Bond, Jr., One of Their Attorneys; Amerada Petroleum Corporation, by Booth Kellough, One of its Attorneys; Anderson-Prichard Oil Corporation, by W. H. Brown, One of Its Attorneys; Cities Service Oil Company, by R. O. Mason, One of

Its Attorneys; Foster Petroleum Corporation, by Villard Martin, One of Its Attorneys; Gulf Oil Corporation, by Russell G. Lowe, One of Its Attor-
[fol. 237-238] neys; Magnolia Petroleum Company, by Robert W. Richards, One of Its Attorneys; Phillips Petroleum Company, by R. M. Williams, One of Its Attorneys; Ray Stephens, Inc., by V. P. Crowe, One of Its Attorneys; Stephens Petroleum Company, by V. P. Crowe, One of Its Attorneys; Sunray Oil Corporation, by M. D. Kirk, One of Its Attorneys; Corporation Commission of the State of Oklahoma, by Floyd Green, Its Attorney.

[fol. 239] IN THE SUPREME COURT OF THE STATE OF OKLAHOMA

No. 33336, No. 33708—Consolidated

[Title omitted]

ORDER DENYING APPLICATION OF PLAINTIFF IN ERROR TO RECALL MANDATE AND TO WITHDRAW OPINION FILED—Filed January 5, 1952

Now on this 7th day of December, 1951, the Court has before it the motion of plaintiff in error to recall mandate and to withdraw opinion filed, and the response of defendant in error objecting to any such action as requested and urging denial of the said motion of plaintiff in error.

And it appearing that the Court promulgated its opinion herein on the 20th day of March, 1951, and that mandate finally issued on the 6th day of July, 1951, and that such opinion has become and is final, and it further appearing that plaintiff in error seeks the recall of such opinion in order that this Court may adjudicate and determine the effect on the matters raised in these appeals of the legisla-
[fol. 240] tive act adopted May 26, 1951, Senate Bill 203, Tit. 52, Chap. 3a, Secs. 1-16, inc., S. L. 1951, p. 136; 52 O. S. 1951, § 287.1-287.15, which act in effect reenacted with some changes the former 1945 act, Okla. Supp. 1949, Tit. 52, Secs. 286.1-286.17, and then by appropriate language repealed the 1945 act which had been so superseded by the 1951 act.

And upon consideration of the motion and response, and being fully advised in the premises, the Court finds that the motion should be denied by order. The following reasons and considerations enter into our present determination and direct and support our order, to-wit:

1. The 1951 act above mentioned does not and cannot have any effect on the matters raised in these appeals, nor on our opinion promulgated herein as aforesaid.

2. The controlling question in these appeals is whether the 1945 act was constitutional as held by the majority opinion, or unconstitutional as reasoned and concluded by the minority.

3. The contentions of the parties were solely aimed at the 1945 act and based upon the 1945 act, and a determination as to which side has the right to prevail must be based solely on the 1945 act as tested by constitutional provisions and measured by the police power of the State, and upon the evaluation of that act as to its impact upon constitutional rights.

4. The 1951 act was actually a continuation in effect of the 1945 act with some additions thereto and changes therein. Since it was a complete superseding of the 1945 act and a reenactment thereof, any further retention of the 1945 act in the statute would be surplusage, and useless repetition, and that accounts for its formal repeal in Sec. 16 of the 1951 act.

5. Art. V, Sec. 54, Oklahoma Constitution, provides:

> "Repeal of statute—Effect. The repeal of a statute shall not revive a statute previously repealed by such statute, nor shall such repeal affect any accrued right, or penalty incurred, or proceedings begun by virtue of such repealed statute."

[fols. 241-242] Therefore a repeal of the 1945 act would not affect the proceedings under the 1945 act insofar as concerns the creation of this unitized management unit or area, nor settle or affect the constitutionality of the 1945 act, nor affect the rights of the parties to participation in the unitization if the 1945 act is finally held constitutional, nor affect the rights of the parties in the various properties if the 1945 act is held unconstitutional.

6. The rule of Thompson v. Nickle, 113 Okla. 44, 239 Pac. 649, as follows:

> "This court has jurisdiction to recall a mandate only when it clearly appears from the record that same was issued through inadvertence or mistake and in violation of the rules of this court."

is still in full force and effect and no showing is made of any inadvertence in the issuance of the mandate herein.

7. With the mandate outstanding and our final opinion pending on appeal to the Supreme Court of the United States, or being in or upon attempted appeal to that court, we should not promulgate any further formal opinion on or in the case.

Therefore, it is ordered that the application of plaintiff in error to recall mandate and withdraw our opinion herein be and the same is hereby denied.

This order authorized and adopted by the Court in conference and ordered filed in this case this 7th day of December, 1951.

Harry L. S. Halley, Acting Chief Justice.

Clerk's Certificate to foregoing paper omitted in printing.

[fol. 243] SUPREME COURT OF THE UNITED STATES, OCTOBER TERM, 1951

[Title omitted]

ORDER NOTING PROBABLE JURISDICTION—January 14, 1952

The statement of jurisdiction in this case having been submitted and considered by the Court, probable jurisdiction is noted.

[fol. 244] SUPREME COURT OF THE UNITED STATES, OCTOBER TERM, 1951

[Title omitted]

ORDER NOTING PROBABLE JURISDICTION—January 14, 1952

The statement of jurisdiction in this case having been submitted and considered by the Court, probable jurisdiction is noted.

(457)

Office-Supreme Court, U. S.
FILED
SEP 4 1951
CHARLES ELMORE CROPLEY
CLERK

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1951

No. 301

THE PALMER OIL CORPORATION, PAUL STERBA and PAUL STERBA, JR., a minor by and through his father and next friend, PAUL STERBA,

Appellants,

vs.

AMERADA PETROLEUM CORPORATION, ANDERSON-PRICHARD OIL CORPORATION, CITIES SERVICE OIL COMPANY, et al.

APPEAL FROM THE SUPREME COURT OF THE STATE OF OKLAHOMA

STATEMENT AS TO JURISDICTION

COLEMAN HAYES,
MARK H. ADAMS,
CHARLES E. JONES,
Counsel for Appellants.

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IN THE SUPREME COURT OF THE STATE OF OKLAHOMA

No. 33336

Consolidated

APPEAL FROM THE SUPREME COURT OF THE STATE OF OKLAHOMA

THE PALMER OIL CORPORATION, a corporation, et al.,

Plaintiffs-in-Error,

vs.

PHILLIPS PETROLEUM COMPANY, a corporation, et al.,

Defendants-in-Error,

and

No. 33708

PAUL STERBA and PAUL STERBA, JR., a minor, by and through his father and next friend, PAUL STERBA, and THE PALMER OIL CORPORATION, a corporation,

Petitioners,

vs.

CORPORATION COMMISSION OF OKLAHOMA, et al.,

Defendants

STATEMENT AS TO JURISDICTION

In compliance with Rule 12 of the Rules of the Supreme Court of the United States, as amended, The Palmer Oil Corporation, (hereinafter referred to as "Palmer"), as

appellant in Cause No. 33336 above, and Paul Sterba and Paul Sterba, Jr., a minor, by and through his father and next friend, Paul Sterba, and The Palmer Oil Corporation, a corporation, appellants in Cause No. 33708 above, submit herewith their statement, particularly disclosing the basis upon which it is contended the Supreme Court of the United States has jurisdiction upon appeal to review the final judgment, decree and decision of the Supreme Court of Oklahoma in the above captioned causes consolidated in said Court, the highest Court of the State of Oklahoma, in which a decision could be had.

I.

Opinion Below and Date of Finality and Date of Petition for Appeal Therefrom

With respect to the foregoing judgment, decree and decision of the Supreme Court of Oklahoma, the same was entered March 20, 1951, the opinion of the Court being reported in —— Okla. ——, 231 Pac. 2d 997, but the finality thereof was stayed by the order of said Court allowing appellants until May 4, 1951 in which to file petition for rehearing, such petition for rehearing having been filed in accordance with such order on May 3, 1951. Such petition for rehearing having been denied by the Supreme Court of Oklahoma without opinion on May 22, 1951, the finality of the judgment, decree and decision of said Court was further stayed by the filing and presentation by appellants on Monday, May 28, 1951 of appellants' application for leave to file second petition for rehearing pursuant to and in accordance with Rule 29 of the Supreme Court of the State of Oklahoma, as amended, the pertinent portion of which reads as follows:

APPLICATION FOR SECOND PETITION FOR RE-HEARING;

"Within five days after a petition for re-hearing is denied, an application for a second petition for re-hearing may be made, but not filed except by leave of Court."

Appellants' application for leave to file second petition for rehearing was, without opinion, denied by the Supreme Court of Oklahoma June 5, 1951, and its judgment, decree and decision became final upon said date.

A true and correct copy of the opinion of the Supreme Court of Oklahoma above referred to including dissenting opinions with respect thereto is hereto attached as Appendix "A"; a true and correct copy of appellants' Petition for Rehearing filed with respect to such opinion is hereto attached as Appendix "B"; a true and correct copy of appellants' Application for Leave to File Second Petition for Re-hearing and brief in support thereof filed with respect to such opinion are hereto attached as Appendix "C".

Appellants' Petition for Appeal from such final judgment, decree and decision was presented and allowed on the 30th day of July, 1951, within ninety (90) days from the final judgment, decree and decision sought to be reviewed herein, and hence such appeal is timely. (Title 28, U. S. Code, Revised, Sec. 2101.)

II.

Basis on Which It Is Contended the Supreme Court of the United States Has Jurisdiction

The final judgment, decree and decision of the Supreme Court of Oklahoma upheld as valid Order No. 20289 of the Corporation Commission of the State of Oklahoma approving a written Plan of Compulsory Unitization

limited solely to the Medrano Sand bodies in the West Cement Oil and Gas Field in Caddo County, Oklahoma, affecting approximately 3700 oil and gas lease surface area acres with an estimated 98,000,000 barrels of oil in place in such sand bodies therein, the result of which was to compel non-assenting lease owners (including "Palmer") and landowners and royalty owners (including "Sterbas") to join in such unitization. In rendering such final judgment, decree and decision, the Supreme Court of Oklahoma construed certain statutes of the State of Oklahoma as authorizing such Order, denying thereby the specific and timely contentions of each of the appellants herein that said statutes and said Order as construed and applied to each of the appellants, their property rights and operations with respect thereto under the undisputed and indisputable evidence in the record, were repugnant to and violated the due process, equal protection and contract clauses of the United States Constitution and did not constitute a proper exercise of police power.

III.

Statutory Provisions and Decisions Believed to Sustain Jurisdiction

The statutory provision vesting the Supreme Court of the United States with jurisdiction of this appeal is Section 1257 of Title 28, United States Code Revised, the material parts thereof providing:

> "Final judgments or decrees rendered by the highest court of a state in which a decision could be had, may be reviewed by the Supreme Court as follows:
>
> * * *
>
> "(2) By appeal, where is drawn in question the validity of a statute of any state on the ground of its

being repugnant to the constitution, treaties or laws of the United States, and the decision is in favor of its validity."

The following decisions sustain the jurisdiction of the Supreme Court of the United States to review said final judgment, decree and decision of the Supreme Court of the State of Oklahoma on direct appeal in this case:

Champlin Refining Co. v. *Corporation Commission*, 286 U. S. 210, 52 S. Ct. 559, 76 L. Ed. 1062, 86 A. L. R. 403;

Bandini Petroleum Co. v. *Superior Court of Los Angeles County*, 293 P. 899, 110 Cal. App. 123, 284 U. S. 8, 52 S. Ct. 103, 76 L. Ed. 136, 78 A. L. R. 826;

Thompson v. *Consolidated Gas Utilities*, 300 U. S. 55, 57 S. Ct. 364, 81 L. Ed. 510;

Henderson Co. v. *Thompson*, 300 U. S. 632, 57 S. Ct. 29, 74 L. Ed. 625;

Hunter Co. v. *McHugh*, 11 So. 2d 495, 202 La. 97, 64 S. Ct. 19, 320 U. S. 222, 88 L. Ed. 5.

IV.

The State Statutes and the Order of the Corporation Commission of the State of Oklahoma Issued Thereunder, Including the Written Plan of Unitization, the Validity of Which Is Involved

Order No. 20289 of the Corporation Commission of the State of Oklahoma (hereinafter referred to as "Commission") entered September 5, 1947, is based upon and was made pursuant to delegated legislative and judicial power granted to private parties by House Bill No. 339 of the 1945 Oklahoma Legislature (O. S. Supp. 1949, Title 52, Sec. 286.1 to Sec. 286.17, inclusive) hereinafter called the "Compulsory Unitization Act". A full, true and correct

copy of such House Bill No. 339 is attached hereto as Appendix "D".

The statutes involved became effective July 26, 1945, such Act being the first of its kind to be enacted by any state. Generally the "Compulsory Unitization Act" requires the Corporation Commission of the State of Oklahoma to approve any written plan of unitization for any oil and gas field in Oklahoma, which written plan has been formulated and petitioned for by 50 per cent (in area ownership) of the oil and gas leaseholds sought to be unitized. Upon approval of such written plan by the Commission the Plan and Order can be nullified by 15 per cent (in area ownership) of the oil and gas lease owners, or the Unit Plan may be amended by 10 per cent (in area ownership) of the oil and gas lease owners, or enlarged by 15 per cent (in area ownership) of the oil and gas lease owners. In this particular case the unit operations carried forth under the written plan are subject to control by 66⅔rds per cent in ownership of the interests (oil and gas lease owners) in the Unit as vested by the written plan. The royalty owners as such have no authority under the statute to initiate, alter or control any such compulsory unitization.

A full, true and correct copy of Order No. 20289 of the Corporation Commission of the State of Oklahoma, including its findings of fact and the Written Plan of Unitization by such Order approved is hereto attached as Appendix "E".

V.

Statement and Nature of Case and Rulings of the Supreme Court of Oklahoma Bringing Said Case Within the Jurisdictional Provisions Relied Upon

Cause No. 33336 in the Supreme Court of Oklahoma was originally commenced before the "Commission" by the filing of a petition on October 22, 1946, by Amerada Petroleum Corporation, Anderson-Prichard Oil Corporation, Phillips Petroleum Company, Ray Stephens, Inc., Stephens Petroleum Company and Magnolia Petroleum Company (herein referred to as proponents) to enforce a compulsory unitization of all oil and gas leases and royalty rights in an area alleged to contain the "Medrano Sand" of the West Cement Field in Caddo County, Oklahoma, by means of a written plan submitted by said petitioners in accordance with the authority purportedly granted by the "Compulsory Unitization Act".

Appellant, Palmer, owner of an oil and gas leasehold within the area sought to be unitized, filed a written protest to said petition and proposed Plan of Unitization, alleging, among other things, that such compulsory unitization would contravene and violate the due process, equal protection and contract clauses of the Constitution of the United States as an improper exercise of police power and that said Medrano Sand did not constitute a single common source of supply of oil and gas.

Hearings were held before the "Commission" at various times beginning December 9, 1946, and ending July 25, 1947. The initial Plan of Compulsory Unitization was amended by its proponents on July 18, 1947, in order to give effect to a change of information or facts occasioned by the drilling and completion of Palmer's Sterba No. 7 well, on or about February 2, 1947. On September 5,

1947, the "Commission" entered its report and Order No. 20289 granting the petition and approving the Plan of Compulsory Unitization, as amended.

Palmer's oil and gas leasehold interest on 160 acres of land was derived through an oil and gas lease executed by Paul Sterba, and others (landowners-lessors) on February 18, 1936, to Chris Pearson, as lessee, who, in turn, assigned said lease to Gulf Oil Corporation. In September, 1938, Gulf Oil Corporation assigned its rights under said lease to Palmer to a depth of 6,000 feet, retaining an overriding royalty. The oil and gas lease under which Palmer acquired its leasehold interest is a customary form used in Oklahoma, which provides for many rights, duties and obligations as between lessor and lessee, with covenants, both express and implied. Said oil and gas lease did not provide for either unitization or pooling of the premises, and generally speaking required the lessee owner of the lease to drill, develop and operate the premises, paying or delivering to the landowner-royalty owner, 1/8th of the oil or gas, or proceeds therefrom, free and clear of expense of production. If oil and gas were not produced within the term of the lease, or if production was secured and thereafter ceased upon the premises, the lease, by its own terms, would end. The lessee, under the terms of said lease, had the right to use such surface area of the land reasonably necessary to drill, develop and operate the leased premises. The number of wells the lessee was required to drill, develop and operate and the location thereof was controlled by the "Commission" under the adequate Oklahoma Oil Conservation Statutes (Appendix "I") and the implied covenants of the lease. A full, true and correct copy of said oil and gas lease is hereto attached as Appendix "F".

The first oil and gas test well drilled in the area of the West Cement Field was completed on October 17, 1917 (being completed in a horizon other than the Medrano Sand). The first test well which resulted in production of gas in the Medrano Sand of the West Cement Field was completed October, 1936, on land located in the next governmental section to Palmer's leasehold, and the first well producing oil from the Medrano Sand in said Field, was discovered in March, 1943, on a quarter section adjacent to Palmer's leasehold.

Palmer completed its first well on its leasehold in October, 1938, which produced oil from the "Niles Sand" at a total depth of 3545 feet; completed its second well in May, 1939, which produced oil from the "Rowe Sand" at a total depth of 3401 feet; completed its third well in October, 1940, which produced gas from the "Medrano Sand" at a total depth of 5260 feet; completed its fourth well in June, 1943, which produced oil from the "Medrano Sand" at a total depth of 5995 feet; completed its fifth well in August, 1943, to a total depth of 6000 feet, as a dry hole, being drilled into a fault; completed its sixth well on November 7, 1943, to a total depth of 6425 feet, as a dry hole, it having also been drilled into the same fault; and on May 21, 1947, completed its seventh well, which produced oil from the "Medrano Sand" at a total depth of 5992 feet.

It will be observed that "Palmer" had assumed the risks and expenditures incident to the drilling of six wells for oil or gas on its "Sterba" lease prior to the enactment of the "Compulsory Unitization Act".

The Written Plan of Unitization approved by Order No. 20289 of the "Commission" embraced 72 separate tracts of land comprising 3700 surface acres. Palmer's "Sterba" oil and gas lease is in the approximate center thereof. At

the time of the entry of the "Commission" Order No. 20289 each of Palmer's "Sterba" Medrano Sand oil wells were being allowed to produce 200 barrels of oil per day by the "Commission" under the General Oil and Gas Conservation Laws of the State of Oklahoma and were capable of producing such oil without waste. The Medrano Sand bodies underlying this area dip sharply from the Northeast to the Southwest ranging from an approximate depth below the surface of 4500 feet to about 6000 feet, the thickness of the sand bodies pinching out at the top of the structure but thickening at the bottom of the structure to a maximum estimated 125 foot thickness. The gas zone or zones are in the upper portions of the sand bodies with the oil zones immediately below the gas zones and water below the oil zones.

The evidence conclusively showed that the production of oil and gas in the West Cement Field had been and still remained under the jurisdiction of the "Commission" pursuant to the General Oil and Gas Conservation Statutes of the State of Oklahoma (Appendix I) and that "Palmer" had, at all times, drilled, developed and operated its said leasehold in accordance with the best known practices and procedures and without waste and in accordance with such conservation statutes.

Although the surface of the land covered by "Palmer's" leasehold represented only approximately 4 per cent of the Unit Surface Area, the division of interest formula used in connection with the Written Plan of Unitization shows that there was attributed to it in excess of 5,000,000 barrels of oil in place in the Medrano Sand bodies. The Plan originally assigned to "Palmer" 5.45 per cent of the production from the Unit Area, which, after the drilling and completion by "Palmer" of its seventh well above mentioned was shown to be in error to the extent that the

proponents of the Plan increased "Palmer's" per cent to 5.51614, the increase representing in excess of 175,000 barrels of oil in place.

The proponents in determining the division of interest between the various tracts within the Unit gave no consideration in the Plan either to (a) the comparative oil lifting costs involved in the production from each of the respective tracts, (b) the comparative efficiency of the respective operations on separate leaseholds, (c) the expense of any operator which, like "Palmer", had the misfortune to encounter faults resulting in dry holes in drilling for Medrano production, nor (d) the comparative operations of the respective operators of the respective leaseholds concerning their respective prior compliance or lack of compliance with the implied covenants of their respective leases to properly develop said leases and protect the same by drilling of said wells thereon—with which implied covenants "Palmer" had carefully complied.

While Gulf Oil Corporation (one of the proponents of the Unit) had never assumed the risk of drilling any well on the "Sterba" lease, proponents of the Plan assigned to Gulf Oil Corporation from the "Sterba" lease 2.15688 per cent of the total estimated Unit production on an assumption not based on fact that that portion of the Medrano oil under said "Sterba" lease was below the depth of 6000 feet and on the further assumption not based on law that "Palmer" has no drainage rights to that portion of the Medrano Sands below 6000 feet but which might be produced from a well completed above the depth of 6000 feet.

All of the known facts clearly show that the Medrano Sand in the West Cement Field was traversed by four geological phenomena known as "Faults" which completely segregated and separated such Sand into five seg-

ments or separate common sources of supply; that the great variation in gas pressure in said five separate segments showed there was no communication of oil or gas between said segments. Proponents stated purpose to compel unitization was for the conservation of gas energy; however, the evidence conclusively showed that two-thirds of all the gas within the Medrano Sand bodies had been produced or consumed before the Order of the "Commission" was made approving Compulsory Unitization.

Appellants, Paul Sterba and Paul Sterba, Jr., although owning an undivided 1/8th royalty right under their land and the "Sterba" lease, were not, under the provisions of the "Compulsory Unitization Act" given any voting voice and did not appear as parties in said cause before the "Commission", or participate therein.

After the Order No. 20289 of the "Commission" on September 5, 1947, "Palmer" moved to set aside the findings of fact made by the "Commission" which are shown in its report and findings (see Appendix "E") and requested the "Commission", among other things, to make the following findings of fact:

> ". . . SECOND: The Medrano Sand Horizon in the West Cement Oil Field in Caddo County, Oklahoma, is completely separated into two or more common sources of supply from and between which there is no communication of oil or gas, by reason of the presence of faults extending through such horizon constituting sealed barriers. . . .
>
> "FOURTH: That unitized management, operation and further development for and of oil and gas from the several separate common sources of supply thereof in the Medrano sand in the West Cement Oil Field in Caddo County, Oklahoma, will not substantially increase the recovery of oil and gas therefrom, or decrease the time in which the same will be recovered, adequate conservation measures now in force and ef-

fect being continued in force and effect by the Corporation Commission of the State of Oklahoma in respect thereto. . . .

"ELEVENTH: The division of interest or formula for the apportionment and allocation of the purported unit production among the several separately owned tracts within the proposed unit area under the plan of compulsory unitization here proposed, if adopted, is not fair, reasonable or equitable."

"Palmer's" motion to set aside findings of fact made by the "Commission" was denied and within due time "Palmer" perfected its appeal to the Supreme Court of the State of Oklahoma, which was there docketed as Cause No. 33336.

In Cause No. 33708, Paul Sterba and Paul Sterba, Jr., a minor, by and through his father and next friend, Paul Sterba, and The Palmer Oil Corporation, a corporation, as petitioners, on the 1st day of July, 1948, filed an application direct in the Supreme Court of Oklahoma against the Corporation Commission of Oklahoma, and the Unit operating Committee consisting of Phillips Petroleum Company, a corporation; Amerada Petroleum Corporation, a corporation; Anderson-Prichard Oil Corporation, a corporation; Ray Stephens, Inc., a corporation; Stephens Petroleum Company, a corporation; Gulf Oil Corporation, a corporation; Magnolia Petroleum Company, a corporation; Cities Service Oil Company, a corporation; Foster Petroleum Corporation, a corporation; and Sunray Oil Corporation, a corporation, as defendants, to assume original jurisdiction on petitioners' petition for Writ of Prohibition to prohibit and restrain the defendants from enforcing the Commission's Order No. 20289, which application to assume original jurisdiction was sustained and docketed as Cause No. 33708 and was consolidated with

Cause No. 33336, by Order of the Supreme Court of Oklahoma on September 25, 1948, reading as follows:

"IN THE SUPREME COURT OF THE STATE OF OKLAHOMA

"No. 33,708

"PAUL STERBA, *et al.*,
Petitioners,

v.

"CORPORATION COMMISSION, *et al.*,
Respondents

ORDER

"IT IS ORDERED that the application of the petitioners for the Court to assume original jurisdiction in the above cause for the purpose of determining whether a writ of prohibition should issue against the respondents above named, be, and the same is hereby sustained.

"IT IS FURTHER ORDERED that the above cause be consolidated with cause No. 33,336—In the Matter of the Petition for the Creation of the West Cement Medrano Unit, and that the respondents above-named be granted until October 15, 1948, to respond to the application of the petitioners for a writ of prohibition.

"DONE BY ORDER OF THE SUPREME COURT IN CONFERENCE this 25th day of September, 1948.

THURMAN S. HURST,
Chief Justice."

ENDORSEMENTS ON ORDER:
"Filed in the Supreme Court
of Oklahoma Sep. 25, 1948
ANDY PAYNE—*Clerk.*"

A true and correct copy of the Application to Assume Original Jurisdiction and Petition For Writ of Prohibition Or Other Proper Relief is attached hereto as Appendices "G", and "H".

Complete transcript of the record and all exhibits were duly filed in the Supreme Court of the State of Oklahoma

in said consolidated cause, abstracts and briefs by all parties in interest were duly filed and the consolidated causes argued on April 19, 1949, and thereafter (by the Supreme Court of Oklahoma) taken under advisement with the final judgment, decree and decision subsequently made and entered as hereinbefore stated.

The Supreme Court of the State of Oklahoma, in its final judgment, decree and decision, held the "Compulsory Unitization Act" and the Order of the "Commission" were in all respects constitutional, affirmed Order No. 20289 of the "Commission" and denied the Writ of Prohibition in the cause as consolidated.

VI.

Stage in the Proceedings Before the Corporation Commission of the State of Oklahoma and the Supreme Court of the State of Oklahoma at Which, and the Manner in Which, the Federal Questions Sought to Be Reviewed Were Raised and Passed Upon and Excerpts from the Record Showing Jurisdiction of the Supreme Court of the United States

Appellant, Palmer, first raised the Federal issues here involved by specific averments in its Response and Protest filed with the "Commission" on December 23, 1946, in respect to the petition filed to approve the Plan of Unitization for the Medrano Sand bodies of the West Cement Field. Palmer, in such Response and Protest, made express averments as follows:

> "FOURTH: (c) That the proposed unit plan and the statutory Act (House Bill No. 339 of the 1945 Legislature of the State of Oklahoma) are invalid, illegal and of no force and effect for the reasons:
>
> "1. That they are in violation of the due process clauses of the Fourteenth Amendment to the Constitu-

tion of the United States and Section 7, Article II of the Constitution of the State of Oklahoma.

"2. That they deny to respondent and protestant the equal protection of laws guaranteed by the Fourteenth Amendment to the Constitution of the United States. . . .

"4. That they impair the obligation of the contracts of respondent and protestant in violation of Section 10, Article I of the Constitution of the United States and Section 15, Article II of the Constitution of the State of Oklahoma. . . .

"(d) That said unit plan submitted in said application and petition is inequitable, unfair and unjust insofar as it has application to the legal and equitable rights and interests of this respondent and protestant.

"(e) That said unit plan submitted and the application and petition for the creation of such proposed unit does not reflect facts justifying or permitting the approving of the proposed plan of unitization; that the proposed area for unitization is not one common source of supply."

The constitutional questions were not passed upon or considered at any time by the "Commission".

On September 5, 1947, "Palmer", after the overruling by the "Commission" of motions for new trial, filed its notice of appeal and its application for certification of facts to the Supreme Court of Oklahoma. On the same date the "Commission", in accordance with the applicable statutes, entered its Order, which, without formal parts, is as follows:

"Journal Entry Allowing Appeal

"Now on this 5th day of September, 1947, it appears to the Corporation Commission of the State of Oklahoma, that The Palmer Oil Corporation, a corporation, protestant in the above styled and numbered cause, has filed herein written notice of its intention to appeal to the Supreme Court of the State of Okla-

homa from the order of this Commission rendered herein on the 5th day of September, 1947, granting the application and petition for unitization herein, and that The Palmer Oil Corporation, a corporation, has requested this Commission to certify the entire record in this cause to the Supreme Court of the State of Oklahoma, as prescribed by law.

"Now, THEREFORE, it is ordered by the Commission that said appeal be granted and that the Secretary of the Corporation Commission of the State of Oklahoma cause the entire record in this case to be transcribed and submitted to the Chairman of the Commission for certification at the earliest possible date.

"DONE at the office of the Corporation Commission, Capitol Office Building, Oklahoma City, Oklahoma, this 5th day of September, 1947."

Thereafter, and in due time, "Palmer" filed its petition in error with the Supreme Court of the State of Oklahoma, stating and alleging, among other things, as follows:

". . . 1. The Statutes of Oklahoma, Title 52, Sections 286.1 to 286.17, Oklahoma Statutes Annotated (H. B. 339 of the 1945 Legislature) upon which said Commission based its authority to make its order and judgment, are invalid, illegal and of no force and effect for the following reasons:

"(a) That said statutes are in violation of the due process of law clause contained in the Fourteenth Amendment to the Constitution of the United States and Section 7, Article II of the Constitution of the State of Oklahoma.

"(b) That said statutes deny to this plaintiff-in-error equal protection of the Laws guaranteed by the Fourteenth Amendment to the Constitution of the United States. . . .

"(d) That said statutes impair the obligation of the contract between this plaintiff-in-error and the lessors of its oil and gas mining lease in violation of Section 10, Article I of the Constitution of the United

States, and Section 15, Article II of the Constitution of the State of Oklahoma. . . .

"2. (a) That said statutes, as applied by the Commission in the approval of said plan of compulsory unitization, are in violation of the due process of law clause contained in the Fourteenth Amendment to the Constitution of the United States and Section 7, Article II of the Constitution of the State of Oklahoma.

"(b) That said statutes, as applied by the Commission in the approval of said plan of compulsory unitization, deny to this plaintiff-in-error equal protection of the Laws guaranteed by the Fourteenth Amendment to the Constitution of the United States.

"(d) That said statutes, as applied by the Commission in the approval of said plan of compulsory unitization, impair the obligation of the contract between this plaintiff-in-error and the lessors of its oil and gas mining lease, in violation of Section 10, Article I of the Constitution of the United States, and Section 15, Article II of the Constitution of the State of Oklahoma, and

"(e) That said statutes, as applied by the Commission in the approval of the plan of compulsory unitization, authorize and permit and the order and judgment of the Commission constitutes an unlawful delegation of power in violation of Section 1, Article IV and Article V of the Constitution of the State of Oklahoma. . . ."

Appellants, Paul Sterba, Paul Sterba, Jr., and "Palmer" specifically raised the same Federal issues as hereinabove set forth in their Petition for Original Writ of Prohibition and Brief filed in support thereof on the 1st day of July, 1948, and docketed as Cause No. 33,708.

The Federal issues and questions here involved were also expressly argued and discussed at length by brief filed by appellants in the Supreme Court of Oklahoma in the consolidated cause.

The Federal issues and questions here involved were

again presented by way of oral argument when said consolidated cause was argued before the Supreme Court of the State of Oklahoma on April 19, 1949.

The Federal issues and questions here involved under the Constitution of the United States were again presented in the Petition for Rehearing filed by appellants (see Appendix "B") and in the Application for leave to file second petition for rehearing and brief in support thereof (see Appendix "C").

VII.

Ground Upon Which It Is Contended the Federal Questions Involved Are Substantial

The issues involved in this appeal are far reaching and of great importance to the entire oil and gas industry and particularly to that business as it is conducted within the State of Oklahoma, one of the great oil producing states.

The oil and gas industry in the State of Oklahoma has been for many years and is now being conducted subject to the supervision of the "Commission" under the broad and comprehensive general conservation statutes relating to the production of oil and gas, which statutes (O. S. 1941, Title 52, Secs. 81 to 279, incl., as amended, to and including the year 1947, O. S. 1949 Supp., Tit. 52, 84 to 127.2) for the convenience of the Court are made a part hereof as Appendix "I". Under such general conservation statutes and the Rules and Regulations of the "Commission" adopted pursuant thereto, every purpose sought to be accomplished under the Written Plan of Unitization here under consideration could be accomplished, except compulsory unitization of an entire oil field and as a result and a part thereof the determination and assignment by private parties of the expenses and the participating rights under such compulsory uitization. (*Denver*

Producing and Refining Co. v. *State, et al.*, 199 Okla. 171, 184 P. 2d 961). These general conservation statutes were originally sustained by the Supreme Court of the United States in the case of *Champlin Refining Co.* v. *Corporation Commission of Oklahoma*, 52 S. Ct. 559, 286 U. S. 210, 76 L. Ed. 752.

The Compulsory Unitization Act is not one of the Oklahoma General Conservation Statutes administered by the "Commission" but rather is a special statute which can only be made effective by the action of private parties. In this case by the actions of private parties, the appellants' oil and gas leasehold and royalty rights have been taken from them and their contractual rights impaired under the guise of the Compulsory Unitization Act, which from a conservation standpoint accomplished no more than was being accomplished under the general conservation laws.

The impact of the Written Plan of Unitization approved by "Commission" Order No. 20289 on appellant "Palmer" is to take from it and give to private parties the operation of "Palmer's" oil and gas leasehold estate, such private parties, without "Palmer's" consent but over its objection, determining the proportion of the benefits, if any, to which "Palmer" will be entitled, thus putting "Palmer", an independent oil producer, off of its property and completely out of business in the field involved. The impact of the Written Plan of Unitization approved by "Commission" Order No. 20289 on appellants "Palmer" and "Sterba" is to completely abrogate the lease contract agreement, completely destroying "Sterba's" (lessor's) right to compel performance of the lessee's contractual obligations under such lease contract, private parties again determining the assigned benefits to "Sterba" without his right to participate in any percentage vote with respect to

the creation or functioning of the "Written Plan of Unitization".

The Assignment of Errors in itself constitutes a statement clearly showing the grounds upon which appellants contend the Federal questions involved are substantial, and for the convenience of the court the Assignment of Errors is here set out at length, namely:

"ASSIGNMENT OF ERRORS

"The Supreme Court of the State of Oklahoma erred in deciding that Order No. 20289 of the Corporation Commission of Oklahoma, in Cause CD 1308, and the Plan of Compulsory Unitization approved thereby and the statutes (House Bill 339 of the 1945 Legislature, Title 52, Oklahoma Statutes Supplement 1949, Sections 286.1 to 286.17, both inclusive), upon which said Court determined said Order and Plan were authorized, as construed and applied to appellants by the decision and judgment of said Court under the undisputed and indisputable evidence in the record, did not deprive appellants of their property without due process of law or deny to them the equal protection of the laws in contravention to the provisions of Section I of the Fourteenth Amendment to the Constitution of the United States, and did not impair the obligation of appellants' leasehold contract in contravention of Section 10, Article I of the Constitution of the United States, because

(a) Said Order, Plan and statutes are an unreasonable exercise of the police power.

(b) Said Order and the findings in support thereof are contrary to the undisputed and indisputable evidence in the record in that the record shows no waste of oil or gas, as defined or contemplated by the Oklahoma Conservation Statutes (Appendix "I"), was being committed, that correlative rights of producers, landowners and royalty owners in and to oil and gas were being protected and conserved in accordance with the general conservation statutes of the State of

Oklahoma and the subsisting Orders of the Commission thereunder.

(c) Said Order, Plan and statutes completely deprive appellants of their property and places it in the hands of private parties to control its management, further development and operation.

(d) Said Order, Plan and statutes completely divest personal, property and contract rights vested and established long before the making of said Order and Plan and the enactment of said statutes.

(e) Said statutes are too broad, vague and unspecific to constitute any reasonable guide to the Commission in making of any Order approving any Plan of Unitization thereunder.

(f) The undisputed evidence establishes that there was no single common source of supply of oil and gas, which is necessary to justify any type of oil and gas conservation statutes.

(g) Said Order, Plan and statutes provide for and constitute more than mere regulations of the business of producing oil and gas, completely taking away from appellants their contractual rights under the oil and gas lease and their rights to possess and develop the property for oil and gas, substituting therefor merely a right to share in the proceeds arising from oil and gas production from the entire Unit.

(h) Appellants, Paul Sterba and Paul Sterba, Jr., as owners of the land and royalty, are not, under the statutes, Order or Plan of Unitization, given any voice in respect to any matter concerning the compulsory unitization.

(i) Said statutes, Order and Plan of Unitization provide for the taking of private property not for a public use or public purpose, but for private purposes and private gain.

(j) Under said statutes percentages of private parties are authorized to decide whether a particular oil and gas field should be unitized and, if so, the type or plan of unitization, and their private decision, at their will, is submitted to the Commission for approval; if approved by the Commission, a certain per-

centage of private parties still have the right to completely nullify the Plan or amend the Plan, or enlarge the Plan, and in any event, control the future operations under the Plan and the winding up and closing thereof; the Commission has no right of its own to initiate the proceedings or formulate the Plan, amend or change the Plan, or otherwise control the Plan, except its power under the general conservation laws.

(k) Said statutes, Order and Plan provide for an unlawful delegation to private parties of the authority to determine legislative policy on any oil field within the State of Oklahoma, and particularly the West Cement Field.

(l) Said statutes, Order and Plan of Unitization unlawfully delegate arbitrary legislative authority to certain percentages of private persons to determine the legislative policy in respect to any oil field within the State of Oklahoma, and particularly the West Cement Field.

(m) Said statutes, Order and Plan unlawfully delegate to private parties the judicial power of determining the rights of royalty owners and minority lessees in respect to any oil field within the State of Oklahoma, and particularly the West Cement Field.

(n) Said Order and Plan unlawfully delegate arbitrary judicial and legislative power to private parties to determine the rights of royalty owners within any oil field of the State of Oklahoma, and particularly the West Cement Field.

(o) Said statutes, Order and Plan provide for drastic changes in contractual and property rights which are not reasonably necessary to promote conservation of oil and gas or prevent waste thereof.

(p) Said statutes, Order and Plan provide for arbitrary, unreasonable and capricious procedures and methods by which private parties determine rights of other private parties in and to any oil field of the State of Oklahoma, and particularly the West Cement Field.

(q) The Order and Plan are unreasonable, arbitrary and capricious and are not based upon the undisputed and indisputable evidence in the record.

(r) The undisputed and indisputable evidence showed conclusively that geological faults separated the Medrano Sand in the West Cement Field into several, separate common sources of supply."

For the purpose of clarity, it may be said, without waiving any of the Assignment of Errors, as referred to, that the fundamental contention of appellants is that the "Compulsory Unitization Act", the order No. 20289 entered by the "Commission" approving the Written Plan of Unitization, as applied to the business and property of appellants, constitutes an unreasonable and discriminatory exercise of the police power. Without intention to limit appellants' contentions in this respect, the unreasonable, arbitrary and discriminatory features of the "Compulsory Unitization Act", the Order No. 20289 of the "Commission" and the written Plan of Unitization approved by said Order, may be grouped and discussed under subheads as follows:

(a) The "Compulsory Unitization Act", the Order of the "Commission" and the Written Plan of Unitization, as applied to the rights of the appellants, are more drastic than reasonably necessary in the taking away of vested contract and property rights.

The taking of property, the impairment of obligation of contract or the unequal protection of law, resulting from a statute operating prospectively, is never as serious a matter as the injury done to owners of vested property rights by a statute which has a retroactive operation. The "Compulsory Unitization Act" (Sec. 286.2) does not apply to any field where the discovery well was drilled twenty years prior to the effective date of the Act, or to any field which, on the effective date of the Act, operated under pressure maintenance, repressuring, or secondary methods of operation. Although the West Cement Field

was discovered in the year 1917, the discovery was not in the Medrano Sand Zone and the "Commission" held that the Medrano Zone was within the provisions of the law, even though the Medrano Sand was discovered in 1936, more than ten years before the petition was filed to unitize the Medrano Sand bodies.

No reason is shown on the face of the Act why the "Compulsory Unitization Act" should have any retroactive effect, or as to why it should have a retroactive effect for a period of twenty years rather than ten years, or five years or any other period, or why it should exclude existing fields being operated under pressure maintenance and not fields which may be operated after the effective date of the Act under voluntary pressure maintenance.

While the pronounced purpose of the "Compulsory Unitization Act" is to secure greater recovery through pressure maintenance and secondary recovery operations, the matter of pressure maintenance is completely out of the picture in respect to the Medrano Sand, as more than two-thirds of the gas in place was produced or dissipated prior to the "Commission's" Order of September 5, 1947.

The leasehold contract between Sterbas and Palmer had been vested and developed many years before the enactment of the Unitization Act and their rights were completely eliminated and reduced to that of sharing in a fractional percentage of the gross production from the Unit. "Palmer" lost its right to drill, develop and operate its own leasehold. Sterbas lost their rights to have "Palmer" drill, develop and operate such leasehold and compel performance of the express and implied covenants of the lease, including the right to control the use of the surface as might be reasonably necessary to operate the premises. The matter of pressure maintenance and secondary recovery operations do not require that these con-

tract and property rights be entirely taken away with a mere right to share in a portion of the production being substituted therefor. Pressure maintenance and secondary recovery operations could be carried forth without denying appellants the right to possess and operate their own property.

The further drilling, operation and development of the Unit is entirely within the discretion of the operator, subject to the control of the Operating Committee by a vote of 66⅔rds per cent. The operator under the control of the Operating Committee could drill, produce or abandon any oil and gas test wells at any place on the premises at any time in its discretion and could change any or all methods of operation and completely wind up and disunitize the unit at any time within its discretion without being subject in any way to the voice or desire of appellants.

(b) The "Compulsory Unitization Act" is completely lacking in due process and equal protection in respect to the rights of royalty owners.

The rights of royalty owners under oil and gas leases have been for many years recognized under the laws and judicial decisions of Oklahoma as being substantially equal to the rights of lessees. The royalty owners usually, as in this case, own ⅛th of the oil and gas produced, free and clear of costs of production and lessees own ⅞ths, subject to the cost and expense of production. The lessors, under repeated judicial decisions, are entitled to compel the lessees to comply with all express and implied covenants of the oil and gas lease.

Under the "Compulsory Unitization Act" the royalty owners have no right to petition for unitization, to set aside any unitization Order, enlarge or amend a Unit.

The "Sterbas" appeared in this matter for the first time when they joined with "Palmer" in their application before the Supreme Court of Oklahoma to take original jurisdiction of their Petition for Writ of Prohibition to prohibit further enforcement of Order No. 20289.

(c) The Unitization Act provides for an unreasonable and unlimited delegation of legislative and judicial power to private parties.

The "Compulsory Unitization Act", the Order of the "Commission" and the written Plan of Unitization were not merely matters of delegated legislation—they are also a delegation of judicial power and authority. There is involved the legislative policy of determining whether a particular oil and gas field should be unitized and, if so, the judicial power of determining the manner in which such field should be unitized and the interest to be assigned to the respective owners thereof.

The matter of determining policy may be legislative but the matter of completely taking away contractual and property rights and substituting therefor something entirely different, even with notice to the lessees, is a judicial determination of rights. Judicial power was also exercised when it was determined that there existed a single common source of supply which could be subject to unitization.

The legislative and judicial power delegated is not a delegation to a state agency, but is rather a delegation to private parties. These private parties have the power in the first instance to decide the policy of whether a field should be unitized; the "Commission" or State agency has no authority in this respect. When these private parties once determine, as a matter of policy, that the Medrano Sand bodies of the West Cement Field should be unitized, then as a part thereof, they also decide the manner in

which it should be unitized, and what should be assigned to each party as his interest in such unit. The only power vested in the "Commission" is to approve or reject the unitization as recommended by private parties. The "Commission" has no authority to enlarge a unit plan, to amend, alter or change such plan, or to supervise operations under the plan, except at the will of private parties. The delegation of legislative and judicial power to private parties under the provisions of the "Compulsory Unitization Act", and as approved by Order No. 20289, and the Plan of Unitization, is a vicious and dangerous type of delegation, arbitrary and unreasonable. The unlawfulness of this delegation is discussed and referred to in an annotation in 3 A. L. R. (2d) 188.

The legislative declaration set forth in Sec. 286.1 of the "Compulsory Unitization Act" is:

> "It is desirable and necessary . . . to authorize and provide for unitized management and operation of oil and gas properties . . . to which the act is applicable, to the end that a greater ultimate recovery of oil and gas may be had therefrom, waste prevented and the correlative rights of the owners in a fuller and more beneficial enjoyment of oil and gas rights, protected."

The declaration sounds good, but means nothing. What is the standard of "greater ultimate recovery?" The word "waste" is nowhere defined in the "Compulsory Unitization Act". The word "waste" is defined in the general conservation law, but it is admitted by all parties that no waste was occurring in the operation of the Palmer-Sterba lease in the Medrano Sands of the West Cement Field.

The words "fuller and more beneficial enjoyment" likewise are undefined and have no definite meaning.

The so-called facts required to be found under Sec. 286.7

of the "Compulsory Unitization Act" and after a finding, of which the "Commission" is required to enter an Order approving the Unit, are not facts in any sense of the word, but are merely generalities which could not operate as standards or guides for any specific plan of unitization. See *Bandini Petroleum Company* v. *Supreme Court*, 293 P. 899, 110 Cal. App. 123, affirmed 284 U. S. 8, 52 S. Ct. 103, 76 L. Ed. 136.

(d) The "Compulsory Unitization Act" provides for a discriminatory delegation of legislative and judicial powers to a certain percentage in interest of private parties.

The legislative and judicial power delegated under the "Compulsory Unitization Act" and approved by Order No. 20289, and the Written Plan of Unitization, is not only one to private parties, but to a stated percentage of interest in private parties. 50 per cent of the lessees initiate and recommend the Plan (Sec. 286.5), 15 per cent may nullify any Order made or Plan approved by the "Commission" (Sec. 286.6), 10 per cent may petition to amend the Plan (Sec. 286.11) and 15 per cent (Sec. 286.12) may seek to enlarge the unit. 66⅔rds per cent control all future drilling, development and operations under the Plan, and the dissolution thereof.

Any Unitization Act, the life, existence and operation of which depends upon the will of a percentage in interest of the private parties having interests therein, is, on its face, arbitrary and unreasonable as to those who do not have a sufficient percentage in interest to protect or enforce their own rights and views. See *Carter* v. *Carter Coal Company*, 298 U. S. 238, 80 L. Ed. 1160, and *State of Washington, ex rel.* v. *Roberge*, 278 U. S. 116, 73 L. Ed. 210.

(e) The findings of the "Commission" were unsupported by the evidence and the basic fact—the

existence of a common source of supply or common property—necessary to be established before any type of conservation legislation can be sustained under the police power, was a matter of serious dispute, and all known facts which were undisputed, clearly showed there were separate common sources of supply within the Medrano Sands of the West Cement Field, and, therefore, there was no common property to be unitized.

All reports of the geological and engineering committees were prepared and presented on the theory that the Medrano Sand of the West Cement Field was separated into five separate segments caused by geological faults which traversed the sand. Pressures were different in each segment. Dry holes established these faults completely through the oil zones.

In all cases where conservation legislation has been sustained, as a reasonable exercise of the police power, the crucial fact—the existence of a common source of supply or common property—has been established without doubt or question. See annotations in 78 A. L. R. 834.

(f) The methods and procedures used in this case in defining the Unit and in determining the interests in the Unit, were unreasonable, arbitrary and unfair and were not reasonably related to conservation or the potection of correlative rights.

There were included within the Unit at least 1020 acres of land under tracts upon which no oil and gas wells had been drilled to a depth sufficient to encounter the Medrano Sand and such tracts were assigned definite interests in the Unit. There were included within the Unit tracts upon which dry holes were drilled and completed to the Medrano Sand, and such tracts were assigned interests in the Unit.

The private parties who formulated the Written Plan and presented the same to the "Commission" and who are

the holders of the operating rights thereunder pursuant to the percentage provisions of the "Compulsory Unitization Act" endeavored to justify the percentage allocation of benefits, if any, thereunder by a formula which was unsound, unreasonable and arbitrary.

On May 26, 1951, Enrolled Senate Bill No. 203, having been passed by both Houses of the Oklahoma Legislature, approved and signed by the Governor as an emergency measure, repealed Title 52, Chapter 3 (b), Sections 1 to 17, inclusive, Session Laws 1945 (which is the "Compulsory Unitization Act"), here complained of. A full, true and correct copy of Senate Bill No. 203 is attached hereto as Appendix "J".

Senate Bill No. 203 appears to be prospective in its application and reflects a recognition on the part of the Oklahoma Legislature of the invalidity of the former "Compulsory Unitization Act", irrespective of any objections which we have raised against the Order of the Commission and the Written Plan of Unitization, removing in this new Act not one but each and every one of the unconstitutional provisions in the former "Compulsory Unitization Act" to which we have objected.

Article V, Section 54 of the Constitution of the State of Oklahoma reads as follows:

> "The repeal of a statute shall not revive a statute previously repealed by such statute, nor shall such repeal affect any accrued right, or penalty incurred, or proceedings begun by virtue of such repealed statute."

Accordingly, Appellants, to have relief, must secure the reversal of the Final Order, Judgment and Decree of the Supreme Court of the State of Okahoma, here on appeal, irrespective of the repeal by the Legislature of the State

of Oklahoma of the "Compulsory Unitization Act" of 1945, complained of.

WHEREFORE, it is respectfully submitted that the Supreme Court of the United States has jurisdiction of this appeal under Title 28, U. S. Code revised, Sec. 1257.

Dated this 30th day of July, 1951.

COLEMAN HAYES,
First National Building,
Oklahoma City, Oklahoma,
MARK H. ADAMS,
1008 Brown Building,
Wichitia, Kansas,
CHARLES E. JONES,
1008 Brown Building,
Wichita, Kansas,
Attorney for Appellants.

APPENDIX "A"

OPINION OF THE SUPREME COURT OF OKLAHOMA, INCLUDING DISSENTING OPINIONS

(Filed in Supreme Court of Oklahoma Mar. 20, 1951. Andy Payne, Clerk.)

IN THE SUPREME COURT OF THE STATE OF OKLAHOMA

No. 33336

THE PALMER OIL CORPORATION, a corporation, et al.,
Plaintiffs-in-Error,

vs.

PHILLIPS PETROLEUM COMPANY, a corporation, et al.,
Defendants-in-Error,

and

No. 33708

PAUL STERBA and PAUL STERBA, JR., a minor, by and through his father and next friend, PAUL STERBA, and THE PALMER OIL CORPORATION, a corporation,
Petitioners,

vs.

CORPORATION COMMISSION OF OKLAHOMA, et al.,
Defendants.

SYLLABUS

1. The Legislature is itself the judge of the conditions which warrant legislative enactments, and they are only to be set aside when they involve such palpable abuse of power and lack of reasonableness to accomplish a lawful end that they may be said to be arbitrary, capricious,

and unreasonable, and hence irreconcilable with the conception of due process of law. Whether the enactment is wise or unwise, whether it is based on sound economic theory, whether it is the best means to achieve the desired result, whether, in short, the legislative discretion within its prescribed limits should be exercised in a particular manner, are ordinarily matters for the judgment of the legislature, and the earnest conflict of serious opinion does not suffice to bring them within the range of judicial cognizance.

2. The police power of the State extends to defining the correlative rights of owners in a common source of oil and gas supply, providing for the management, operation and further development of such common source of supply and distributing the proceeds thereof among those entitled thereto.

3. House Bill 339 of the 1945 Legislature (Tit. 52 O. S. Supp. 1947, secs. 266.1 to 286.17), known as the Unitization Act is not violative of secs. 7, 15, 23 or 24 of Art. II, or sec. 1 of Art. IV or secs. 1 or 51 of Art. V, of the Constitution of the State of Oklahoma, nor violative of sec. 10 of Art. I of or of the Fifth or Fourteenth Amendments to the Constitution of the United States.

4. The Unitization Act does not involve any unconstitutional delegation of legislative power by the provision which requires the petition of lessees of record of more than fifty percent of the area of the common source of supply in order to give the Commission jurisdiction under the Act.

5. Order No. 20289 of Corporation Commission is not contrary to either the law or the evidence.

Proceedings before the Corporation Commission by Phillips Petroleum Company and others, lessees, who petition for the creation of a unit, having for its purpose the unitized management, operation and further development of what is termed the West Cement Medrano common source of supply of oil and gas. The Palmer Oil Corporation and others, lessees, lessors and royalty owners, pro-

tested. From an Order of the Commission creating the unit protestants appeal.

ORDER AFFIRMED

Original action by The Palmer Oil Corporation, et al. against Corporation Commission for Writ of Prohibition.

WRIT DENIED

Claude Monett, Coleman Hayes and Hart Brown, all of Oklahoma City, Oklahoma and Mark H. Adams, Charles E. Jones and Wm. I. Robinson, all of Wichita, Kansas, For Plaintiff-in-Error, The Palmer Oil Corporation.

Hatcher & Bond, of Chickasha, Jack W. Page, of Oklahoma City, For Plaintiffs-in-Error, Tom Potter, et al.

Harry D. Page and Booth Kellough, both of Tulsa, Oklahoma, For Defendant-in-Error, Amerada Petroleum Corp.

Brown, Darrough & Ball, of Oklahoma City, For Defendant-in-Error, Anderson-Prichard Oil Corp.

Wm. C. Liedtke, Russell G. Lowe, Redmond S. Cole, Cyrus L. Billings, James B. Diggs, Jr., and Charles L. Follansbee, all of Tulsa, For Defendant-in-Error, Gulf Oil Corporation.

Walace Hawkins, of Dallas, Texas, W. R. Wallace, Oklahoma City, Okla., For Defendant-in-Error, Magnolia Petroleum Co.

Don Anderson, Oklahoma City, For Defendants-in-Error, Stephens Petroleum Co. and Ray Stephens, Inc.

Don Emery, Rayburn L. Foster, R. B. F. Hummer, R. M. Williams, all of Bartlesville, and Harry D. Turner, of Oklahoma City, For Defendant-in-Error Phillips Petroleum Co.

George W. Hazlett, Villard Martin, Wilbur Heard, R. M. Williams, Chas. B. Ellard, A. B. Tanco, Forrest M. Darrough, J. H. Crocker, M. Darwin Kirk, T. Murray Robinson, Amici Curiae.

GIBSON, J.

Cause No. 33,336 is an appeal from an Order of the Corporation Commission providing for the unitized manage-

ment, operation and further development of what is designated as "West Cement Medrano Unit", located in Caddo County, Oklahoma, made in pursuance of the provisions of 52 O. S. Supp. 1945, secs. 286.1 to 286.17. Cause No. 33,708 is an original action for a Writ prohibiting the Corporation Commission from exercising further jurisdiction in the matter of said unitization. Since the question of the issuance of the writ depends upon the issues involved on the appeal the same will be disposed of following determination of the appeal.

Involved on the appeal are two major questions. One, the constitutionality of said sections of the statute which, as a whole, constitute what is known as the Unitization Act (H. B. 339 of the 1945 Oklahoma Legislature). The other, the legality of the order of the Commission if authorized under the Act to effect unitization. These questions will be considered in the order stated.

The nature of the Act and the purposes sought to be accomplished thereby are clearly reflected in the legislative declaration made in the first section thereof, as follows:

> "Sec. 286.1. The Legislature finds and determines that it is desirable and necessary, under the circumstances and for the purposes hereinafter set out, to authorize and provide for unitized management, operation and further development of the oil and gas properties to which this Act is applicable, to the end that a greater ultimate recovery of oil and gas may be had therefrom, waste prevented, and the correlative rights of the owners in a fuller and more beneficial enjoyment of the oil and gas rights, protected."

Plaintiffs-in-error recognize that the subject-matter of the Act is one within the police power of the State and that the constitutional questions presented are whether the Act constitutes a reasonable exercise thereof.

We will refer to and state or quote the particular provisions of the Act involved on considering the arguments directed thereto.

The plaintiffs-in-error, though numerous, represent but three classes in interest: lessors, lessees and those having, severally, royalties interest which are in excess of one-eighth of the total production.

On behalf of the lessees it is contended that the Act is violative of Art. II, sections 7, 15, 23 and 24 of the Constitution of the State of Oklahoma, and of Art. I, sec. 10, of and the Fourteenth Amendment to the Constitution of the United States. For the purpose of the presentation, there is no segregation of the contentions as to each of said constitutional provisions for the expressed reason the grounds relied on have common application to all. Two grounds are relied on. One, the Act as a whole is unreasonable. The other, the Act constitutes an unauthorized delegation of legislative power.

On behalf of the lessors it is contended that the Act is violative of all of said constitutional provisions and of sec. 51 of Art. V of the Constitution of the State of Oklahoma. The several violations are referable to definite grounds which have common application and there is no occasion to segregate the contentions as to each. Five grounds are relied on. One, the Act constitutes an unauthorized delegation of legislative power, which ground is the same as lessees' ground number Two and is urged on the same bases. Two, that both in the formation of the unit and in the committee management thereof lessees only are recognized and therefore to the exclusion of the lessor. Three, the Act imposes an unauthorized burden upon the royalty interest in the production. Four, the Act imposes an unauthorized burden upon the leased premises of the lessor. And, fifth, the Act is violative of the obligations of contracts.

The substance of lessees' ground One is that the Act is unreasonable because it does not require as a condition to the establishment of the unit a finding by the Commission that, for the purpose of conservation, the application of Act will be more effective than that of the existing laws. In support thereof attention is called to the fact that under the provisions of the Act the unit may be established in

fields where production has been had for nearly twenty years; that unitization, in which gas energy is a prime factor for operation, would be less satisfactory by reason of the expenditure thereof during operations prior to unification and would disturb the multitude of rights that had become established on the basis of the methods being employed under the existing laws. There is then declared:

> "It is our earnest contention that a compulsory unitization statute which clearly disrupts the existing law and existing rights can only be justified where the advantages to be gained far offset the losses to be sustained to property or individual rights."

There are then recited the findings required of the Commission by the Act, and it is stated that thereunder "the Commission could approve a plan of unitization which definitely could not result in an increased recovery of oil and gas over that being accomplished by present methods of operation under the general conservation law." It is then declared that, by reason thereof:

> "We submit that any compulsory unitization law, competing with the general conservation law whose real purpose is exactly the same, should not be given constitutional sanction under the police power unless it specifically provides that the Commission finds that any plan of unitization approved thereunder will accomplish the conservation of oil and gas with substantially greater results than is being accomplished under the general conservation law still in full force and effect."

The findings required by the Act appear in section 286.4 as follows:

> "If upon the filing of a petition therefor and after notice and hearing, all in the form and manner and in accordance with the procedure and requirements hereinafter provided, the Commission shall find (a) that the unitized management, operation and further de-

velopment of a common source of supply of oil and gas or portion thereof is reasonably necessary in order to effectively carry on pressure-maintenance or repressuring operations, cycling operations, water-flooding operations, or any combination thereof, or any other form of joint effort calculated to substantially increase the ultimate recovery of oil and gas from the common source of supply; and (b) that one or more of said unitized methods of operation as applied to such common source of supply or portion thereof are feasible, will prevent waste and will with reasonable probability result in the increased recovery of substantially more oil and gas from the common source of supply than would otherwise be recovered; and (c) that the estimated additional cost, if any, of conducting such operations will not exceed the value of the additional oil and gas so recovered; and (d) that such unitization and adoption of one or more of such unitized methods of operation is for the common good and will result in the general advantage of the owners of the oil and gas rights within the common source of supply or portion thereof directly affected, it shall make a finding to that effect. . . ."

As indicated in the contention, the Act does not authorize the Commission to withhold establishment of unification where in the opinion of the Commission oil conservation may be accomplished better under existing laws. It limits the findings required of the Commission to the ascertainment of definite facts which in the opinion of the Legislature are sufficient to justify application of the law.

There is no contention that the standards prescribed are insufficient in any respect other than in not including the suggested finding. Therefore, it necessarily follows that the contention challenges the authority of the Legislature in dealing with matters of policy, which is a realm that is without the scope of judicial inquiry. The Supreme Court of the United States, in C. B. & Q. Railroad Com-

pany, et al. v. McGuire, 219 U. S. 549, 55 L. Ed. 328, 339, said:

> "* * * The scope of judicial inquiry in deciding the question of *power* is not to be confused with the scope of legislative considerations in dealing with the matter of *policy*. Whether the enactment is wise or unwise, whether it is based on sound economic theory, whether it is the best means to achieve the desired result, whether, in short, the legislative discretion within its prescribed limits should be exercised in a particular manner, are matters for the judgment of the legislature, and the earnest conflict of serious opinion does not suffice to bring them within the range of judicial cognizance."

This Court, in In re Application of Richardson, 199 Okla. 406, 184 Pac. (2d) 642, said:

> "The Legislature is itself the judge of the conditions which warrant legislative enactments, and they are only to be set aside when they involve such palpable abuse of power and lack of reasonableness to accomplish a lawful end that they may be said to be merely arbitrary, capricious, and unreasonable, and hence irreconcilable with the conception of due process of law."

To the same effect see Herrin v. Arnold, Judge, 183 Okla. 392, 82 Pac. (2d) 977; Jack Lincoln Shops, Inc. v. State Dry Cleaners' Board, 192 Okla. 251, 135 Pac. (2d) 332; Phelps et al. v. Childers, State Auditor, 184 Okla. 421, 89 Pac. (2d) 782; City of McAlester v. Jones, 181 Okla. 77, 72 Pac. (2d) 371; Barnes 1. Smith, Judge, 179 Okla. 71, 64 Pac. (2d) 1217; Grable v. Childers, State Auditor, 176 Okla. 360, 56 Pac. (2d) 357.

Though not necessary to so state, the Act reflects that the Legislature not only considered operations had and being had under existing laws but gave recognition to those methods employed which it considered to better serve the over-all purpose of conservation by withholding

the application of the Act thereto. Such is reflected in second section of the Act (52 O. S. Supp. 1945, sec. 286.2), which we quote:

> "This Act shall apply only to common sources of supply of oil, oil and gas, or gas distillate in this State.
>
> "The provisions of this Act shall not apply to any common source of supply of oil, oil and gas, or gas distillate or any part or parts thereof which at the effective date of this Act are being operated by or under pressure maintenance, repressuring, or secondary recovery methods or operations, provided, that nothing contained in this Act shall prevent the voluntary inclusion and extension of areas in which are located such existing pressure maintenance, repressuring, or secondary recovery methods or operations as unit areas under the provisions of this Act. Provided this Act shall not apply to any field where the discovery well has been drilled twenty (20) years prior to the effective date of this Act."

Lessees' ground number Two and lessors' ground number One, both to the effect the Act constitutes an unauthorized delegation of legislative power, have reference to the force of the following provisions of the Act:

> "* * * To give the Commission jurisdiction hereunder, the petition shall be filed by, or with the authority of, lessees of record of fifty percent (50%) or more of the area of the common source of supply or portion thereof sought to be unitized. The petition shall set forth a description of the proposed unit area with a map or plat thereof attached, must allege the existence of the facts required to be found by the Commission as hereinabove provided and shall have attached thereto a recommended plan of unitization applicable to such proposed unit area and which the petitioners consider to be fair, reasonable and equitable. (Sec. 286.4).
>
> * * * *

"If at any time after the filing of a petition for the creation of a unit and within sixty (60) days after the entry of an order by the Commission approving the creation of the same, lessees of record of fifteen percent (15%) or more of the proposed unit area, if prior to the entry of the order by the Commission, or lessees of record of fifteen percent (15%) or more of the unit area as defined by the approved plan of unitization and order of the Commission, if after the entry of such order, shall file written protest with the Commission against the creation of the unit, the Commission shall vacate all action of any kind theretofore taken and dismiss the proceedings for the creation of such unit." (Sec. 286.6).

It is contended that, since the fact of the legislation is made dependent upon the will of a majority of those to be affected thereby, there is a delegation of legislative power. As supporting the contention that there has been an unauthorized delegation of legislative power and a violation of due process by reason thereof the cases of Carter v. Carter Coal Company, 298 U. S. 238, 80 L. ed. 1160, and State of Washington ex rel. v. Roberge, 278 U. S. 116, 73 L. ed. 210, are relied on. In the Carter case the donees of the power were given authority to make decisions determinable of the rights of others and in the Washington case the donees were given an arbitrary power to veto the exercise by others of their unquestioned rights. Neither situation obtains herein.

In the first place, the powers so granted can neither establish nor disestablish the unitization when established because the power of establishment rests with the Corporation Commission. In such situation there is not a trace of legislative power exercised. This conclusion is fortified by the fact that even if the establishment were dependent upon the will of the lessees their exercise thereof would not be the exercise of legislative authority. The reason for this is clearly reflected in the opinion of the

Supreme Court of the United States in Currin v. Wallace, 306 U. S. 1, 83 L. ed. 441. Therein it is said:

> "So far as growers of tobacco are concerned, the required referendum does not involve any delegation of legislative authority. Congress has merely placed a restriction upon its own regulation by withholding its operation as to a given market 'unless two-thirds of the growers voting favor it.' Similar conditions are frequently found in police regulations. Thomas Cusack Co. v. Chicago, 242 U. S. 526, 530, 61 L. ed. 472, 475, 37 S. Ct. 190, L. R. A. 1918A, 136, Ann. Cas. 1917C, 594. This is not a case where a group of producers may make the law and force it upon a minority (see Carter v. Carter Coal Co., 298 U. S. 238, 310, 318, 80 L. ed. 1160, 1188, 1192, 56 S. Ct. 855) or where a prohibition of an inoffensive and legitimate use of property is imposed not by the legislature but by other property owners (see Washington ex rel. Seattle Title Trust Co. v. Roberge, 278 U. S. 116, 122, 73 L. ed. 210, 214, 49 S. Ct. 50, 86 A. L. R. 654). Here it is Congress that exercises its legislative authority in making the regulation and in prescribing the conditions of its application. The required favorable vote upon the referendum is one of these conditions. The distinction was pointed out in J. W. Hampton, Jr. & Co. v. United States, 276 U. S. 394, 407, 72 L. ed. 624, 629, 48 S. Ct. 348, where, in sustaining the so called 'flexible tariff provision' of the Act of September 21, 1922, and the authority it conferred upon the President, we said: 'Congress may feel itself unable conveniently to determine exactly when its exercise of the legislative power should become effective, because dependent on future conditions, and it may leave the determination of such time to the decision of an Executive, or, as often happens in matters of state legislation, it may be left to a popular vote of the residents of a district to be affected by the legislation. While in a sense one may say that such residents are exercising legislative power, it is not an exact statement, because the power

has already been exercised legislatively by the body vested with that power under the Constitution, the condition of its legislation going into effect being made dependent by the legislature on the expression of the voters of a certain district."

This type of legislation is not uncommon and has been applied in a variety of situations where community of interest obtains. Frequent examples are acts dealing with water rights and drainage. In Oklahoma it is reflected in 82 O. S. 1941, sections 111-273, providing for creation of Irrigation Districts upon petition of fifty or a majority of the holders of title to lands susceptible of irrigation; in 82 O. S. 1941, sections 281-382, providing for creation of Drainage Districts upon petition of five or more residents and further providing (sec. 311) that upon protest of 50% of the landowners, or owners of 50% of the total acreage embraced in the district, the proceedings are to be dismissed; in 82 O. S. 1941, sections 541-687, providing for creation of Oklahoma Conservancy District Act, upon petition of percentage of property owners and the dismissal of the proceedings upon protest of a percentage of the landowners; and 82 O. S. 1941, sections 721 et seq., providing for creation of Water Improvement District upon petition of fifty or a majority of the holders of title to lands in the proposed district. Under authority of these Acts districts have been created and thereafter have functioned. It does not appear that the constitutionality of any has been challenged upon the ground that the operation of the law is predicated upon the will of those whose interests are involved although the question of rights controlled by the Acts has been involved in litigation and the validity of the Acts recognized by this court. (Fry v. Swift, 164 Okla. 4, 22 Pac. (2d) 94; Seikel v. Grimes, County Treas., 189 Okla. 658, 119 Pac. (2d) 59). That question, however, has been presented frequently in other jurisdictions and, so far as we have noted, the uniform holding is to the effect there is no delegation of legislative power and in the briefs herein there have been cited no cases in

point holding to the contrary. State v. Drainage District No. 1, 123 Kan. 191, 254 Pac. 372; Barrett v. City of Osawatomie, 131 Kan. 50, 289 Pac. 970; Tarpey v. McClure, 190 Cal. 593, 213 Pac. 983; City of Dawson v. Bolton, 166 Ga. 232, 143 S. E. 119; Boagni v. Mayor and Bd. of Aldermen of City of Opelousas, 177 La. 835, 149 So. 494; Field v. Barber Asphalt Paving Co., 194 U. S. 618, 48 L. ed. 1142.

We are of the opinion that lessors' ground number Two is without merit. The basis of the conclusion is that there is not granted to the royalty owners like power of petition and protest as that granted to the lessees. Under the Act the landowners who have not leased their acreage are classed as lessees.

The question is not the wisdom of granting the right of protest to the lessees while withholding it from the royalty owners but whether it was within the power of the Legislature so to do. It was within the power of the Legislature to do so because being within its police power to enact the law without the consent of either lessees or royalty owners it was optional with it to require the consent of either. Where privilege is granted to some in such situation the Constitution is satisfied if all similarly situated are treated alike. This statement of the law has been declared in many decisions. A clear-cut statement thereof is made in Taggart v. Claypool, 145 Ind. 590, 32 L. R. A. 586, 44 N. E. 18. The United States Supreme Court, in Field v. Barber Asphalt Paving Co., supra, said:

> "The exact point of objection is that the improvement is not to be made if a majority of the resident owners of the property liable to taxation therefor shall file with the city clerk a protest against such improvement, which privilege of protest is not given to non-resident owners, thereby discriminating against them. It is well settled, however, that not every discrimination of this character violates constitutional rights. It is not the purpose of the 14th Amendment, as has been frequently held, to prevent the states from classifying the subjects of legislation and making

different regulations as to the property of different individuals differently situated. The provision of the Federal Constitution is satisfied if all persons similarly situated are treated alike in privileges conferred or liabilities imposed. (Citations omitted). The alleged discrimination is certainly not an arbitrary one; the presence within the city of the resident property owners, their direct interest in the subject-matter, and their ability to protest promptly if the means employed are objectionable, place them on a distinct footing from the nonresidents, whom it may be difficult to reach. Furthermore, there is no discrimination among property owners in taxing for the improvement. When the assessment is made it operates upon all alike. It has been held to be within the power of the legislature of Missouri to authorize the council to order the improvement to be made without consulting property owners. Buchan v. Broadwell, 88 Mo. 31. If the legislature saw fit to give to those most directly interested, and whose consent could be most readily obtained, the right to protest, such action did not deprive the other persons of rights guaranteed by the Constitution."

Involved under the Act are the plural rights of production from the common pool. The purpose of the Act is to so adapt the exercise of such rights that the value of the reservoir may be realized to the fullest degree possible by those entitled thereto and according to their respective shares therein. This can be done only through an intelligent control of the drilling operations. The royalty owners are those who have committed to lessees their right to produce in exchange for a definite share in the production. Such rights have been so committed in reliance upon the ability of the lessees to produce. Neither the fact of nor the amount of the royalty interest presents any problem for solution in establishing unification because same is recognized and fixed by the law. The real problem involves an appraisal and adaptation of the existing prob-

lems that rest upon the shoulders of the lessees. By reason of their responsibility the lessees have an interest that is distinctive from that of the royalty owners but it is not adverse thereto because the interests of the latter are dependent upon and must rise or fall with that of the lessees. By reason of their knowledge of the problems they, necessarily, are in a better position than the royalty owners to appraise the practicability and hence the wisdom of unification. To realize that the information they possess is deemed vital to a determination of the question of unification one needs only to read the showing that is required by the Act to be made. By reason of their activity the lessees are in a position to both attest the wisdom or lack of wisdom of unification and produce the evidence that is determinative thereof. The royalty owners, who by their own acts have completely divorced themselves from the activity, are often not conveniently accessible and could afford little if any helpful information if available, but they are granted the right of an appeal from the action of the Commission, and this case is an example of its exercise. The distinction between the lessees and the royalty owners as classes in interest and the reason why the Legislature should extend a privilege so responsible to one and not the other is so manifest that it precludes any idea that in doing so the legislative Act was capricious. Such being true there is no basis for holding the Act unconstitutional for that reason.

Lessors' ground Three, that the Act imposes an undue burden upon the royalty, has reference to the provisions of the Act which treats the royalty interest that is in excess of one-eighth of the production as a part of the lessees' working interest which is considered to be seven-eighths of the production. It is contended that, under the lease contract, the lessor is entitled to the full amount of the royalty run to his credit free from liability for operating expense. That his right in that respect is impaired because such royalty in excess of one-eighth of production is made liable for operating expense.

Under the Act an one-eighth part of the unit production

allocated to each separately owned tract is to be regarded as royalty and to be distributed to or among the royalty owners free and clear of unit expense; and the remaining seven-eighths is designated as a leasehold interest and made liable for the unit expressly chargeable to such tract. The effect of the unitization upon any royalty interest in excess of one-eighth under any existing lease and the provision made therefor is reflected in the following (52 O. S. Supp. 1945, sec. 286.9):

> "Subject to such reasonable limitations as may be set out in the plan of unitization, the unit shall have a first and prior lien upon the leasehold interest only in the unitized common source of supply (exclusive of a one-eighth (1/8) royalty interest) in and to each separately-owned tract, the interest of the owners thereof in and to the unit production and all equipment in the possession of the unit, to secure the payment of the amount of the unit expense charged to and assessed against such separately-owned tract. The interest of the lessee or other persons who by lease, contract or otherwise are obligated or responsible for the cost and expense of developing and operating a separately-owned tract for oil and gas in the absence of unitization shall, however, be primarily responsible for and charged with any assessment for unit expense made against such tract and resort may be had to overriding royalties, oil and gas payments, royalty interests in excess of a one-eighth (1/8) of the production, or other interests which otherwise are not chargeable with such cost, only in the event the owner of the interest primarily responsible fails to pay such assessment or the production to the credit therefor is insufficient for that purpose. In the event the owner of any royalty interest, overriding royalty, oil and gas payment or other interest which under the plan of unitization is not primarily responsible therefor pays in whole or in part the amount of an assessment for unit expense for the purpose of pro-

tecting such interest, or the amount of the assessment in whole or in part is deducted from the unit production to the credit of such interest, the owner thereof shall to the extent of such payment or deduction be subrogated to all of the rights of the unit with respect to the interest or interests primarily responsible for such assessment."

The importance of the segregation of a definite amount of the total production as royalty is manifest and it is further attested by the fact it is made an integral part of all leases where the cost of operation is to be borne by the lessee. It follows that such segregation is as fully important where the operation is unitized and operated as one lease. In such situation the question is whether the proportion of the production to be regarded as royalty is reasonable. The amount thereof is not called in question so far as the same affords the basis of the unit operation, but it is held that the effect thereof is to impose an unlawful burden on any royalty interest in excess of the one-eighth, if such there be. Considering as we must that the one-eighth royalty prescribed is reasonable to accomplish the over-all purpose, it follows that the right to the exceptional royalty as such must yield to the extent it militates against the plan but should be preserved to the extent it may be done consistently with such plan. We hold that the Act gives full recognition to such right and only varies the method prescribed in the lease for its enjoyment. Prior to unitization such a lessor would be entitled to receive the entire royalty share free from the cost of production. The enjoyment of this right, however, was based upon the obligation of the lessee to produce and so deliver. Under the unitization such obligation obtains upon the unit to the extent of an one-eighth royalty and the obligation of the lessee to account for the remainder is recognized and declared. The liability of any excess royalty is made possible because for the plan of operation it is accorded the status of a leasehold interest. But by reason of the lease contract treating it as royalty

the liability is made secondary and could only obtain where there was a breach of the obligation of the lessee to discharge the operation cost allowable thereto as part of the leasehold interest. We take it that the extent of the right and the assurance of its enjoyment is in substance preserved.

In support of lessors' ground number Four it is urged that the Act authorizes the unit to burden the leased premises beyond the right of the lessee thereof to do so.

If it be true that the Act authorizes the unit to burden any premises beyond the right of the lessee thereof and at the same time in excess of what would be justified for the operation of the unit, such fact, appertaining to be a matter of detail in the operation of the unit, could not be held to affect the integrity of the Act as a whole because, by the terms of the Act, the provisions are made severable (52 O. S. Supp. 1945, sec. 286.16). Though the Act may authorize such an additional burden it does not require that such burden be placed thereon in derogation of the lessors' rights. And we cannot anticipate that those charged with the operations of the unit will exercise the powers granted in an unlawful manner.

The 50 per cent provision of Sec. 286.4 has hereinbefore been considered. No rights have been exercised under the 15 per cent provision of Sec. 286.6, though its validity is questioned here. It is unnecessary to determine the constitutionality of this provision at this time. The same is true of the 10 per cent provision of Sec. 286.11 providing for reconsideration by the Commission of the plan in operation and fixed correlative rights thereunder. These undetermined questions are reserved.

Bearing upon the contentions that the order of the Commission is contrary to the evidence there is said:

> "The petition and amended plan of unitization and order of Commission approving the same in form follows generally the requirements of the statutes under which they were prepared and made. The broad issue raised by The Palmer Oil Corporation and other peti-

tioners in error is that the order of the Commission approving the plan of unitization was contrary to the clear weight of the evidence in one or more respects. The petitioners in error also raise the question of constitutionality."

The Act provides that one aggrieved by the order may appeal to this Court and defines the jurisdiction and duty of this court on appeal, as follows:

"* * * The Supreme Court on appeal shall have jurisdiction and authority and it shall be its duty to review the record of proceedings and transcript of evidence and to consider the validity of the order of the Commission appealed therefrom. On appeal the order of the Commission appealed from shall be regarded as prima facie valid, fair, reasonable and equitable, but if the order is found to be contrary to the clear weight of the evidence, in any one of such respects, the same shall be vacated and set aside and the cause referred to the Commission for further proceedings not inconsistent with the judgment of the court; otherwise the said order shall be affirmed." (Sec. 286.7)

By reason of the presumption which is expressly made to attend the order of the Commission there is cast upon plaintiffs in error the burden of showing that the order in the respects challenged is contrary to the weight of the evidence and we have repeatedly so held. Croxton v. State, 186 Okla. 249, 97 Pac. (2d) 11; Grison Oil Corp. v. Corporation Commission, 186 Okla. 548, 99 Pac. (2d) 134; Oklahoma Cotton Ginners' Ass'n. v. State, 174 Okla. 243, 51 Pac. (2d) 327; Denver Producing & Refining Co. v. State, 199 Okla. 171, 184 Pac. (2d) 961.

The importance of the rule lies in the fact that the formulation and execution of the legislative policy has been entrusted to the Commission because it is thought to be peculiarly experienced and fitted for the purpose and it is not to be contemplated that the courts may substitute

their notions of expediency and fairness for that of the Commission. Peppers Refining Co. v. Corporation Commission, 198 Okla. 451, 179 Pac. (2d) 899; Denver Producing & Refining Co. v. State, supra.

In the light of these governing rules we consider the several alleged grounds of error in making the order.

It is contended that the area of the West Cement Medrano Unit is not limited to one "common source of supply."

Under the Act, a unit must be limited to a common source of supply. The Act does not in express terms define a common source of supply, but there was at the time of the enactment a legislative definition of the term (52 O. S. 1941, sec. 84(c), now 52 O. S. Supp. 1947, sec. 86.1(c)), and we construe such definition as a part of the Act. Therein, the term is thus defined:

> "(c) The term 'Common Source of Supply' shall comprise and include that area which is underlaid or which, from geological or other scientific data, or from drilling operations, or other evidence, appears to be underlaid, by a common accumulation of oil or gas or both; provided, that, if any such area is underlaid, or appears from geological or other scientific data, or from drilling operations, or other evidence, to be underlaid by more than one common accumulation of oil or gas or both, separated from each other by a strata of earth and not connected with each other, then such area, as to each said common accumulation of oil or gas or both, shall be deemed a separate common source of supply;".

That more than one common source of supply may exist in a given sand appears to be recognized in the statute and in H. F. Wilcox Oil & Gas Co. v. State, 162 Okla. 89, 19 Pac. (2d) 347, we held that more than one common source of supply could obtain in such sand by reason of faults that constitute impervious barriers between segments thereof.

The existence of faults in the unit area is recognized and the question before Commission was whether the segments of the sand were disconnected by reason of the faults. The findings of the Commission (in paragraph 2) which is directly responsive to the issue is as follows:

> "* * * that the said Medrano sandstone underlying said above described lands as aforesaid constitutes a single common source of supply of oil and gas, all parts of which are permeably connected so as to permit the migration of oil or gas or both from one portion of said common source of supply to another wherever and whenever pressure differentials are created as a result of the production or operations for the production of oil or gas from said producing formation; that although faults are known to exist in parts of said common source of supply said faults do not prevent substantial migration of oil and gas and of pressures from one part of said common source of supply to another; that said common source of supply of oil and gas has heretofore been designated by the Commission and is generally known as the West Cement Medrano Pool."

The question of the faults in the area and the effect thereof had previously been before the Commission a number of times, and the study and hearings thereon had culminated in orders wherein the Commission found that the whole of the Medrano sand as then developed was in fact one common source of supply. At the hearing herein the testimony adduced was chiefly that of petroluem engineers and geologists who testified on the basis of both personal surveys made and of an interpretation of the accumulated data in the hands of the Commission. The testimony of these experts was in direct conflict but that of each was positive upon the issue. Under the circumstances the objection is necessarily addressed to only the weight of the evidence. Under the holding of this court and that of courts generally (Chicago, R. I. & P. Ry. Co. v. Pruitt, 67 Okla. 219, 170 Pac. 1143; 22 C. J. 728, sec. 823) the

weight to be given opinion evidence is, within the bounds of reason, entirely for the determination of the jury or of the court, when trying an issue of fact, it taking into consideration the intelligence and experience of the witness and the degree of attention he gave to the matter. The rule should have peculiar force herein where by the terms of the Act the Commission is recognized as having peculiar power in weighing the evidence. Since the evidence before the Commission was competent and sufficient, if believed, to sustain the order we must, and do, hold that the order is sustained by the evidence and that the contention is without merit. Ft. Smith & W. Ry. Co. v. State, 25 Okla. 866, 108 Pac. 407; Bromide Crushed Rock Co. v. Dolese Bros. Co., 121 Okla. 40, 247 Pac. 74.

It is contended that the proposed area of the Medrano sand included within the unit has not been reasonably defined by actual drilling operations.

52 O. S. Supp. 1947, sec. 286.5, provides, in part, as follows:

> "The order of the Commission shall define the area of the common source of supply or portion thereof to be included within the unit area and prescribe with reasonable detail the plan of unitization applicable thereto.
>
> "Each unit and unit area shall be limited to all or a portion of a single common source of supply. Only so much of a common source of supply as has reasonably been defined by actual drilling operations may be so included within the unit area."

Paragraph 4 of the Commission's Findings of Fact, to which attention is called, is as follows:

> "That the outer boundaries of said common source of supply of oil and gas underlying and by this Order included within the foresaid Unit Area have been reasonably defined by actual drilling operations, both by the drilling of wells within and the drilling of wells outside said Unit Area; that said Unit Area consists of approximately 3700 acres of land."

It is urged (1) that the Commission does not find that "all portions of the alleged common source of supply included within the unit area has been reasonably defined by actual drilling operations", and (2) that there is included within the unit areas wherein the common source of supply has not been defined by actual drilling operations.

There is no merit in the first ground. Paragraph 2 of the Commission's findings, hereinbefore quoted and discussed, expressly finds that the sand constitutes a common source of supply throughout the area of the unit. The presumption is that same was made on the basis of the required statutory showing. And the Commission in effect so declares in Finding No. 12, where it is said that the plan of unitization "in all respects conforms to and complies with the requirements of H. B. 339 of the 1945 Oklahoma Legislature."

The limits of the pool and of the unit area were determined by the productive boundaries reflected in exhibits prepared by the Geological Committee and based on data and information gained from wells actually drilled to the Medrano sand or to depths sufficient to encounter the sand if present.

Within the unit there are numerous tracts on which no wells have been drilled into the Medrano sand. The source of the common supply thereunder, which is reflected in said exhibits, was predicated on the evidentiary force of drilling operations had in other areas.

It is not contended that the exhibits do not reflect the common source of supply under the undrilled tracts nor that the wells drilled elsewhere were not sufficient to show the existence of the supply thereunder—in fact, the expert witnesses of both plaintiffs in error and defendants in error testified that the drilling operations had were sufficient therefor. The contention is that actual drilling upon the tracts is required by the Act in order to justify a finding of the common source of supply. The contention is thus stated:

> "Our interpretation of the statute requires the Commission to find that the common source of supply has

been reasonably defined by actual drilling operations in respect not only to the outer boundaries but also all tracts therein included, as well as the depth of the common source of supply."

The theory advanced is that the words of the statute, "reasonably defined by actual drilling operations", negative the idea that the finding can be predicated upon drilling operations had elsewhere, and that independently of the statutory provision opinion evidence of the existence of the common source of supply under such tracts based on the wells drilled elsewhere is mere conjecture. As supporting the latter contention Myers et al. v. Shell Petroleum Corporation, 153 Kan. 287, 110 Pac. (2d) 810, is cited as holding that the opinion evidence of an expert geologist on geological conditions at a point one-half mile distant from the control point was mere conjecture and could not be accepted as law. The court there did not expressly nor in substance hold that such distance from the control point, as a matter of law, made the opinion conjecture, but that by reason thereof and other facts which would preclude the evidentiary force thereof the same was not permitted to go to the jury. However, even if the construction of the holding were justified it would not be persuasive as authority herein where the particularity which is required in a court of law does not obtain. Peppers Refining Co. v. Corporation Commission, supra.

Actual drilling upon the undrilled tracts or within a definite proximity thereto is neither prescribed by the statute nor by law. In fact, we are of the opinion that each is negatived, the first by the language of the statute and the other by the holding in the Peppers case, supra.

The alleged mandatory force of the statute is predicated upon the use of the word "reasonably" as used in the statute. We think the use of the word precludes rather than justifies the construction claimed. If the word "reasonably" were omitted the words "defined by actual drilling operations" would import absoluteness. The effect of prefixing the word "reasonably" to the words "been de-

fined'' necessarily qualifies the import of absoluteness which would obtain without it. In prescribing the formula the Legislature must have had in mind the impracticability of accomplishing the full purpose of the Act if its operation was to be conditioned upon actual drilling on all tracts. There is no prescription touching the places of the drilling operation nor the depth of the wells nor of what must be reflected therein. The only prescription is that the source of supply must have reasonably been defined thereby. The drilling operations required are simply those the evidentiary force of which is sufficient to justify a conclusion, by those capable in law of weighing the facts as to the existence of the source of supply. There is unanimity in the testimony herein that the wells drilled afforded sufficient evidence to define the common source of supply within the unit area and the Commission so found. We hold that said attack under the order is without merit.

It is contended that the discovery well in the West Cement field was drilled and completed more than twenty years prior to the effective date of the Unitization Act and, therefore, the Act does not apply to such field and, by reason thereof, there is no authority in law for the order of the Commission.

There is involved a construction of sec. 286.2 of the Act, quoted above.

The West Cement Medrano sand, which is the common source of supply of the unit, was discovered October 15, 1936. The first discovery of oil and gas in the area of the unit was on or about October 17, 1917, but same was in a sand different from the Medrano sand. The question is, which of the wells is the discovery well within contemplation of the statute. If it be the well drilled in 1917 the Commission was without authority to establish the unit. If it be the well drilled in 1936 the authority to establish the unit is beyond question. Such was the issue before the Commission, and thereon it held:

> ''That the West Cement Medrano pool is a field within the meaning of that term as used in the second

paragraph of Section 2 of H. B. 339 of the 1945 Oklahoma Legislature; that the term 'field' in ordinary usage has no fixed or definite meaning but is sometimes used to refer to the general area where a number of oil or gas producing formations are found and at other times used to refer to a particular common source of supply or pool; that as used by the Legislature aforesaid, the term was intended to relate to the particular common source of supply or pool sought to be unitized under the Act and not to any general area which in a broader sense could be termed a field; that in effect said Act throughout relates to and deals only with single common sources of supply of oil and gas."

It is said that the word "field" has a commonly accepted meaning which denotes the surface area where there is a production and carries no significance as to the sand from which the production is had and that, in absence of a different meaning, apparent or obvious from the statute or definitely indicated thereby, the word should be construed in accordance with said commonly accepted meaning. It is further said that since the term "common source of supply" is used frequently in the Act while the word "field" is used but once, as indicated, it must be presumed that the word reflected a different meaning than that of the term "common source of supply".

Defendants in error recognize the fact that the ordinary meaning of the word "field" is as contended and that the word appears only once in the Act. They do not question the correctness of said rules of construction where the force thereof is not limited. They contend that the rules are subservient and therefore subordinate to the fundamental rule of construction that the legislative intent is to be gathered from the entire Act. And, as declaring said rule and, at the same time giving an apt illustration of the limitations upon the rules relied on by plaintiffs in error, there is quoted from Meads et al. v. Human, 84 Okla. 82, 202 Pac. 797, the first paragraph of the syllabus, which is as follows:

"In considering a legislative enactment it is not safe to base a construction upon a particular word or phrase, for the language of legislative enactments is not always precise and accurate, and, besides, one portion may frequently be designed to extend, qualify, or limit another so that the meaning of one portion of a statute may depend upon the effect of another. Hence, it is an established rule in the exposition of statutes that the intention of the law-giver is to be deduced from a view of the whole and of every part of a statute taken and compared together. The several provisions of the statute should be construed together in the light of the general purpose and object of the act and so as to give effect to the main intent and purpose of the Legislature as therein expressed. If possible a statute should be so construed as to render it a consistent and harmonious whole; if different portions seem to conflict, they should, if practicable, be harmonized, that construction being favored which will render every word operative rather than one which makes some words idle and nugatory."

In the light of this rule the question is what construction is consonant with the general purpose and object of the Act. That the functions of the Act have reference to a definite sand as the source of common supply and is without reference to other sand or sands that may afford another source of supply within the same field, is without question. As indicated in sec. 286.2, quoted above, the fact of previous development had in the area constituting the unitized pool, the extent thereof and the methods employed are taken into consideration and the functioning of the unitization plan is required to yield thereto in designated instances. It thus appears that the extent of development in the source of supply that is made subject to unification was within the legislative mind. If the well drilled in the field in 1917 had discovered the West Cement Medrano sand the Act would not authorize the unitization. The Act, in terms, makes no reference to any development

in any sand other than that to which the unitization is made to apply and it cannot be gathered from the Act that the fact of discovery of other production in the field is material to the operation of the unit. We are of the opinion that the only logical deduction to be made, when considering the Act as a whole, is that the discovery well, in the mind of the Legislature, is that well in the field that discovered the common source of supply which is the subject of the unification. To hold otherwise would not only defeat the legislative intent herein but in other situations as well because the court takes judicial knowledge of the fact major pools have been and may yet be discovered in areas where many years ago oil had been discovered in upper and shallower sands which have become practically if not completely depleted.

The order of the Commission is attacked upon the further grounds (1) the proposed "plan of unitization" is not "fair, reasonable and equitable" as required by sec. 286.5 of the Act, and (2) the "division of interest or formula for the allocation of unit production" is not fair, equitable and reasonable as required by said section.

These contentions require no extended discussions. They are directed solely to the weight of the evidence and the most that is shown in the argument is the existence of conflict in parts only of the evidence. Such does not challenge the weight of the pertinent evidence as a whole and for reasons hereinbefore stated does not disturb the presumption that attends the order of the Commission.

Plaintiff in error The Palmer Oil Corporation, a lessee, contends that the order of the Commission is particularly unfair, inequitable and unreasonable as to it as an operator.

Comprised within the unit is the S. W. ¼ of Sec. 35, Twp. 6 N., R. 10 W., upon which the Gulf Oil Corporation held an oil and gas lease from the owners. In 1938 Gulf assigned to Palmer all of its right, title and interest therein to the depth of 6000 feet, "retaining the lease as to the oil, gas and casinghead gas, together with all the rights, privileges and appurtenances thereunto belonging, below

the depth of 6,000 feet." The 6000 foot subsurface level passes through the Medrano sand by reason of which there is productivity in the sand both above and below said level. Palmer drilled a well to but not beyond said level and obtained production from said sand therein. Gulf has no well producing from the sand below said level and is not authorized under the Unitization Plan to drill and produce therefrom. The Palmer well was completed during the pendency of these proceedings before the Commission. The order of the Commission fixed the percentage of the authorized lease production that each should receive and hold same to be applicable to the production of the Palmer well. It is contended that the Commission was without authority to permit Gulf to share in such production. And further contended that the percentage division is unfair and contrary to the evidence if Gulf is entitled to so share.

The first contention is predicated solely upon the assumption that the rule of capture obtains. That it is subject to be modified by the State in the exercise of its police power we held in Wilcox Oil & Gas Company v. Bond, 173 Okla. 348, 48 Pac. (2d) 820. And that the right of capture as claimed herein does not obtain where by Act the State undertakes to protect the correlative rights of owners in a common source of supply, regulate the drilling and distribute the production thereof, we held in Patterson v. Stanolind Oil & Gas Co., 182 Okla. 155, 77 Pac. (2d) 83.

Pertinent to the second contention are the following facts. In the plan of unitization exhibited with the petition of the proponents the percentages of the lease production allotted were Palmer 5.145% and Gulf 2.538%, reflecting a lease total of 7.683%. Speaking generally, the total, or lease percentage, was predicated on the thickness of the sand underlying the lease and such thickness was deduced from the elevations of the top and bottom of the sand as ascertained by the surveys made. And the individual percentages based upon the proportions of the thickness which lay above and below the 6000 foot level. With the completion of the Palmer well it appeared as a matter of fact that the top of the sand at that point lay lower

than reflected in the earlier survey. And, such being true, without change in the depth of the bottom of the sand as established, there was reflected at that point a less thickness of sand than was considered in fixing the lease percentage of the pool production. Touching the effect of such discovery the Commission states in its report the following:

> "In addition to the proceedings and notices aforesaid, further mention is here made of the fact that during the course of said hearing, The Palmer Oil Corporation drilled and completed an additional well on a lease owned by it in the aforesaid field, necessitating a relatively slight change in the percentage of interests of the several separately owned tracts in the field shown in 'Exhibit B' attached to the recommended Plan of Unitization, and also necessitating the inclusion of such additional well in 'Exhibit D' attached to said Plan of Unitization."

As a result, the original exhibits which reflected said percentages were amended so as to reflect the lease percentage at 7.67294% (same being .01006 less than before) and the shares of Palmer and Gulf therein at 5.51614% and 2.15680%, respectively.

The question before the Commission was the extent the common thickness of the sand on the lease as previously fixed was to be diminished by reason of th diminution of thickness reflected at the point where the well was drilled. Palmer contends in substance that the thickness was 108 feet, while the Commission found same to be 96 feet. The question of the thickness turned chiefly upon the depth of the top of the sand as reflected in said well. The testimony was conflicting. The Commission determined that the weight of the evidence lay in the testimony of one Montgomery, a witness for proponents, which was concurred in by the entire Geological Committee, and not in that of one McKee, a witness for Palmer, who testified to the contrary, and so found. Under the rules hereinbefore announced we cannot say that holding of the Com-

mission is contrary to the weight of the evidence nor that the percentages prescribed thereon are arbitrary.

The Order of the Commission is affirmed.

The Writ prayed in cause No. 33,708 is denied.

Arnold, C. J., and Corn, Halley and Johnson, J. J. concur;

Luttrell, V. C. J., and Welch, Davison and O'Neal, JJ., dissent.

IN THE SUPREME COURT OF THE STATE OF OKLAHOMA

No. 33,336

THE PALMER OIL CORPORATION, A CORPORATION, ET AL.,
Plaintiffs in Error

vs.

PHILLIPS PETROLEUM COMPANY, A CORPORATION, ET AL.,
Defendants in Error

and

No. 33,708

PAUL STERBA AND PAUL STERBA, JR., A MINOR, BY AND THROUGH HIS FATHER AND NEXT FRIEND, PAUL STERBA, AND THE PALMER OIL CORPORATION, A CORPORATION,
Plaintiffs in Error

vs.

CORPORATION COMMISSION OF OKLAHOMA, ET AL.;
Defendants in Error

WELCH, J., Dissenting

At the outset I would emphasize the thought that it is too difficult to undertake to determine the constitutionality of the compulsory unitization act without in any manner discussing or considering the impact on this legislation of the positive provision therein which grants the unquali-

fied veto power for sixty days to fifteen percent of the lease owners by acreage.

By that provision, considered in its necessary connection with other provisions, the act speaks for itself and thereby announces, either that it is not a necessary and proper exercise of the police power for conservation, or that it is a delegation of the police power and legislative power of the state to the will or wishes of oil operators or lessees.

In view of the positive language of this veto power provision and its direct connection as an integral part of the unitization scheme, it remains as a puzzle to me how the court can uphold the act and treat this veto power provision as some character of a separate item which may remain as a question undetermined and reserved for future determination.

It is not contended merely that this veto power provision is a separate unconstitutional part of the act. If that were all it might well be said that if compulsory unitization may be forced upon forty-nine plus percent of lessees and one hundred percent lessors against their will, any possible veto power would be to that extent a welcome escape. But that is not the crux of the matter on this point at all. It is not contended merely that this veto power provision violates private rights, if it is contended at all that it violates private rights. The complete violation of private rights is accomplished by the overall, and other, provisions of the act. As to this veto power provision, it is in fact contended that such provision is one, and an important one, of the details which demonstrate the unconstitutional attempt by this legislation to take over, for private gain, the private property rights, and private contract rights of free citizens. With this contention I agree.

In behalf of this act it is contended that the necessity to conserve oil and gas and prevent waste is the source of the state's power to compel unitization and that such necessity authorizes and requires the state to compel unitization. But by provision of the act itself the act takes this power

away from the state and lodges it in lessees, that is, first the power to initiate the proceedings, and second, the veto power for sixty days. This is a negation of the necessity of this power in the state, or an unconstitutional delegation thereof as I view it.

The compulsory unitization order herein involved affected about 3700 acres of land embracing 72 tracts under separate ownership, with numerous oil and gas lessees of separate tracts, and several hundred owners of royalty interests in the oil and gas being produced and to be produced, from what was treated as one common source of supply. At the time of the order, distributed over most of the tracts, but not all of them, there were about fifty or more wells producing oil and gas, and some additional wells in process of drilling.

The order, over the objection of some of the lessees or operators engaged in producing oil, and over the objections of numerous land owners and royalty owners, directed the operation of the entire tract as a single unit. The result would be that a committee of the lessees would select one operator who would take over all leases and all operation of the entire acreage as to the stated source of supply, and all wells now producing oil or gas would be operated by that one operator, and all future wells would be drilled by that one operator at any or all places in the tracts, without regard to the contracted leases of the tract drilled; that all oil produced from the entire tract, or from any one or several of the 72 separate tracts would be marketed by the one operator, all expenses for operating the aggregate 72 tracts deducted, and the remaining balance distributed by the operator to the various lessees and royalty owners. This distribution would be made without regard to the separate tracts from which the oil came, and without regard to any ratio of production or ratio of expense as to the various separate tracts. That is, the entire tract of 3700 acres was to be drilled and produced, and the oil marketed, as if the aggregate tract constituted a *single unit*, covered by a single lease. The distribution of net proceeds was to be made according to a pre-arranged

calculation intended to represent a computation of the present and future oil production value of each separate tract. That is, each separate tract was considered and it was assigned, or there was allocated to it, a stated percentage of the whole unit's future production.

This appeal tests the constitutionality of the legislative act authorizing such action and the power of the Corporation Commission to make such an order, and tests the validity and fairness of the order, and the sufficiency of the evidence before the Commission.

In considering this matter and making the order the Corporation Commission acted pursuant to the provisions of 52 O. S. Supp. 1945, secs. 286.1 to 286.17. That act proceeded as a conservation measure on the premise that it was desirable and necessary in various circumstances to authorize and provide for unitized management and further development of an oil and gas field or pool found to be a common source of supply, "to the end that a greater ultimate recovery of oil and gas may be had therefrom, waste prevented, and the correlative rights of the owners in a fuller more beneficial enjoyment of the oil and gas rights, protected." It authorizes the Corporation Commission to supervise and administer the act and to order and compel unitized management of whatever should be the proper area of the oil field or pool under consideration. The jurisdiction of the Corporation Commission, however, could not attach unless and until "lessees of record of 50% or more of the area * * * sought to be unitized" should file petition therefor. Then after giving notice in accordance with requirements of general oil and gas conservation statutes, and hearing all parties who desired to appear either for or against the petition, the Corporation Commission should go forward and order the unitization if it was found that such unitization was proper, and necessary in the interest of conservation, and if the unitization plan suggested by the petitioners or approved by the Corporation Commission was thought to be or was found to be for the common good and to result in general advantage to the owners of the oil and gas rights. Pro-

vision was then made that a committee of the oil and gas lessees would select a single operator who would thereafter operate the area involved as a single unit and distribute the net oil production according to the predetermined percentage to the various separate tracts of land involved, or to the lessees and royalty owners of each separate tract. It was then provided, sec. 286.6, supra, that at any time within sixty days after the entry of the order creating the unitization unit, lessees of record of fifteen percent of the unit area might file written protest against the creation of the unit and thereupon it should become the mandatory duty of the Corporation Commission to vacate the action theretofore taken and dismiss the proceedings for the creation of such unit. And lessees whether they did or did not join in the original fifty percent petition could join in this fifteen percent protest and destroy the unitization and accomplish dismissal of the proceedings, provided only that such action was taken within sixty days of the creative order of the Corporation Commission, and as stated in the majority opinion, any owner of land in the area not leased for oil and gas was to be classified as a "lessee" of his land for all purposes of the act. I deem it unnecessary to set out further detail provisions of the act except such as are stated here, and such as are generally referred to in other paragraphs of this opinion.

The petition to the Corporation Commission in this instance was signed by lessees of more than fifty percent of the area sought to be unitized, and said petitioners attached thereto a complete plan of unitization set out in great detail and at great length, with their statement of a percentage division or allocation to each separate tract of a stated interest in the future oil production from the aggregate area. And petitioners alleged they considered their stated plan and division to be fair, reasonable and equitable, all as required in section 286.4, supra.

Both lessees and royalty owners appeared and protested, but after notice and hearing the Corporation Commission made findings in favor of the petitioning lessees that unitized management of this area was proper and reasonably

necessary for the purposes set out in the act, and that such unitized management would probably result in greater ultimate oil production. And the Corporation Commission approved the detailed plan of unitization presented by petitioning lessees, and ordered unitization over the objection and protest of those operators and owners of royalty interests who appeared in opposition to unitization as aforesaid.

The unitization act makes special provision for appeal to this court from such an order, Sec. 286.7, supra, and such appeal is authorized under the general oil and gas conservation statutes. 52 O. S. 1941, Secs. 111, 112, 113 and 136, as those sections are referred to in the present act in section 286.7 thereof.

While other serious questions are presented, I think the constitutional attack is controlling. Appellants in effect and in final analysis point out a number of provisions of the act, and objections thereto as it is here applied, which they urge demonstrate several violations of constitutional provision and of individual constitutional rights. We list them as follows:

1. The act, though purporting to be necessary, and justifiable under police power, for conservation, may only be brought into operation by petitioning lessees of fifty-percent or more of the area involved.

2. That after hearing and determination by the Corporation Commission that unitized management is necessary, and will prevent waste, and will probably result in greater recovery at no increase in net costs, and that the unitization is for the common good and to the best advantage of all; and after the Corporation Commission has ordered the unitization plan into effect, and after unitized operation has commenced, the order may in effect be "vetoed," and the unitization vacated and abolished by the mere protest against it in sixty days of lessees of fifteen percent of the unit area affected.

3. That the act recognizes only lessees in the formation of the unit, in the percentage that has the veto power in sixty days, and in the committee management of the unit,

to the exclusion of any participation therein by the landowner lessors and all others who have fixed interests in the oil being produced and thereafter to be produced.

4. That the act purports to authorize abrogation of contract rights and relieve lessees of contract liabilities and that the unification does abrogate or supersede all contracts between landowner lessors and their chosen lessees, and that is accomplished upon, or by, action of the lessees alone.

5. The same objections as affecting others than original lessors, who have theretofore acquired fixed interests in the oil production.

6. That the act authorizes contingent operating expense liens against royalty interests which theretofore by express contract had been protected against any such liens and against any share or portion of operating expenses.

7. That by the fixed purpose of the act, and by the unitization, no lessee can get that for which he contracted, that is, his full portion of the oil produced from the tract on which he took his oil and gas lease.

8. That by the fixed purpose of the act, and by the unitization, no landowner lessor can count on receiving that for which he contracted, that is, his fixed share of the oil and gas produced from his land, and the result must be that oil taken or produced from one man's land is used in part to pay royalty to another who owns other and separate land in the unit area.

9. The same objection as applies to others than landowner lessors who have acquired fixed interest as royalty or shares of production.

10. That the act and unitization plan abrogates or nullifies various specific provisions of lessor, lessee contracts such as the right to receive delay rentals, rights to free gas for individual use, rights of lessor as against excessive surface use for pipe lines, or such excessive use for tank construction.

11. That as to objecting lessees the act operates to take the oil and gas leases acquired by them and assign or set over such leases to the unit for unitized operation for

the benefit of all, thus in direct effect taking private property for private use and private gain without consent of the owner.

12. That as to land in the so-called unit area not leased for oil and gas operation, the act operates to compel the owner to submit his land to drilling operations whether he wishes to do so or not, and that for direct benefit to other private persons or corporations, and that as concerns the owner of any such land the act operates in effect to coerce and compel him to engage with others in the oil production business whether he wishes to do so or not.

To state the above numbered objections would seem to demonstrate that the legislative act and the unitization plan do transgress constitutional provision and do violate constitutional rights.

As to objection number one, the proponents of unitization contend that the act is justified under the police power and as a conservation measure. But that justification and purpose loses much force by the fifty percent provision above noted. If the State may compel unitization under its police power and for conservation, then why should not such power be exercised without depending upon the will and wishes of fifty-percent of the lessees of the area affected? It would seem that if there is such justification it would exist as well where a majority objected to commencement of the proceedings as in the case where fifty percent were willing to move forward as petitioners. On this point the proponents cite cases upholding "proration" and "spacing." But when the State, acting through the Corporation Commission, exercises those powers, there is no dependence in the first instance upon the assent of fifty-percent.

What we have just said applies with even more force to objection number two. It is a most unusual kind of exercise of police power and exercise of the power of conservation to provide that after the Corporation Commission has investigated and made solemn findings as to necessity, feasibility, applicability to prevent waste, general benefits and common good, and has put into operation the

exercise of the police power for conservation, that the whole thing may be nullified by the mere written protest of holders of fifteen percent of the lease rights affected. I am not impressed with the argument that a regulation is so necessary for conservation and of such urgent character as to justify such drastic action under the police power of the state, and yet be under such control of the persons most affected as to be subject to veto by fifteen percent after it has been implemented by all of the hearings, findings and orders employed to put it into effect.

On this point the proponents of unitization cite cases upholding the Barbers' Act and the Dry Cleaners' Act where prices are fixed by percentage of those most affected. But in those cases the prices fixed are not maximum but are minimum prices and the individual operator is left to operate his own business. In those instances there is no taking over of the individual business and the operation of all such businesses as a unit by one operator, for the so-called general good of all interested parties.

It seems to me that in objections one and two there is demonstrated entirely too much delegation of the legislative power, or perhaps it is better stated, too much delegation of the police power of the State to persons financially interested in the regulation itself, and that on account of such delegation the act and the unitization plan cannot find constitutional sanction.

As to the third objection, while the oil and gas lessees may be said to be the persons most interested in the application of unitization, the landowner lessors and other royalty owners have a fixed interest in the oil being produced and to be produced, and it is pointed out that the act and the plan are so framed as to allow such generous consideration of the lessees with no consideration or participation whatever by lessors or royalty owners. The oil field or source of supply may only be brought into the jurisdiction of the Corporation Commission for application of the State's police power and conservation power by action of fifty-percent of the lessees. When the Unitization plan is put into effect it is operated and managed by

a committee composed exclusively of the lessees. The advance calculation of the various interests to govern distribution of production was set up by the petitioning lessees. And during the first sixty days of operation of the unit it is to the stated percentage of lessees that the veto power is given. The interests of the lessors and lessees differ only in degree, that is, in percentage of ownership of the production. Equal protection of the law would seem to dictate that such exclusive control could no more be given to the lessees to the exclusion of the lessors than could such exclusive control be given to the lessors and royalty owners to the exclusion of the lessees. Therefore the constitutional right to equal protection of the law is violated.

As to objection number four, of course the act authorizes and the plan effectuates almost complete abrogation of the lease contracts between lessors and lessees. About the only provision of the lease contract which is preserved is the provision as to the ratio of sharing between lessor and lessee, and that provision is not fully preserved if the lease provided for a royalty of more than one-eighth of the oil produced. That provision is not fully sustained for the further reason that in unitization the lessor does not continue to receive the contracted share of the oil produced from his land, but, instead, he receives the contracted share of the percentage of the over-all production which is allocated to his land. This may of course be more or it may be very much less than the oil produced from his land. Although the over-all purpose of the act and of the plan is to increase ultimate production, we cannot say with certainty that every lessor will receive as much compensation or compensation of equal value to him under unitization, as he would under separate drilling and production of his land as he contracted for with his selected lessee.

What I have said also applies to objection number five. And as to both objections four and five it appears that even the royalty share which the owner was entitled by contract to receive may be reduced by operation of the

unitization plan, or at least there may be or may come into existence a lien on some part of the royalty share for operating expenses. Such a lien or the probability of such a lien is specifically provided by section 9 of the act, which is section 286.9 supra and is carried forward by express provision of the unitization plan submitted by the petitioners, and approved by the Corporation Commission.

I observe of course that functioning of the well spacing law or of the proration law operates in some measure to affect the contracts between lessor and lessee. But such effect is only upon what might be the desire of the lessee to drill more wells or the desire of both lessor and lessee to produce oil more rapidly. As to those operations there is nothing like the taking over of contract rights which is here evident. We observe the authorities justifying the abrogation of the contract rights in the interest of or in subservience to the police power of the State. But we do not observe authority for such an abrogation of contract rights as is here evident by action of the lessees for their own individual interest. And we are convinced that this act and the unitization plan impair and abrogate contracts ~~and contract rights~~ far beyond any constitutional authorization.

What we have said above disposes somewhat of objection number six, but we should emphasize it with this further suggestion. Though royalty owners, by express contract with the original lessee operator, might be specifically entitled to receive the agreed share of production as royalty, without any part of the operating expense, yet, if the aggregate royalty share exceeds 12½% or ⅛th, the excess would be subject to being burdened with liens for operating expenses if they were not paid by the lessee operator who agreed to pay them. It is pointed out that in case any such royalty owner should be compelled to pay any portion of operating expenses that by subrogation he would have a claim therefor against his contract party who agreed to pay them, but in that I see no fair substitution for the contract right to receive the royalty free of any charges for operating expense.

As to objection number seven, it is clear from the act and the unitization plan that no lessee is to receive the agreed portion of the oil which he may produce from his leased premises. Any plans he may have made for his drilling campaign and production and marketing procedure are necessarily cast aside. In lieu thereof the operator, chosen by a majority of the committee, will develop the lessees' premises as much or as little as they determine. The lessee will be paid not his share of his production or the production from his leased premises, but his share of the pre-determined percentage which the calculated productivity of his lease tract bears to the aggregate pre-determined productivity of the entire area.

In this action I observe, of course, that if such lessee controls sufficient area he may veto the act and the plan if he does so within sixty days. And in considering purely the economies of the act and plan it might seem that if more than eighty-five percent find the plan wholesome and profitable and desirable, the remaining less than fifteen percent should not be heard to complain. But it has ever been true that constitutional rights have not been sustained or withheld depending upon the service or advantage thereof to majorities. Most often constitutional prohibitions or constitutional rights have been enforced in favor of and for the protection of minorities, no matter how small the percentage so occupied by the minority in question.

What I have said as to objection number seven applies with equal force to objection number eight and nine considered in behalf of landowner lessors and other royalty owners. It is inevitable that in many instances the royalty received must be substantially less than the fixed royalty share of the production from the individual tract of land. It necessarily follows that oil produced from one man's land would be taken in part to pay royalty to another who owned a separate tract of land in the unit area. While this might be justified under some proper type of exercise of the State's police power for conservation, I think clearly it cannot find constitutional sanction in the

manner undertaken by this act and this plan as aforesaid.

As to stated objection numbered ten, the rights specially mentioned are rights of value. In Wise v. Tabor, 201 Okl. 428, 206 P. 2d 970, this court recently considered the rights of a surface owner or lessee as against excessive surface use by the oil operator in the construction of storage tanks, and that right was held to be of substantial value, so that a threatened invasion of such right could be prevented by injunction.

As to stated objections numbered eleven and twelve it must be conceded of course that this taking of private property is accomplished without consent of the owner and results in private use and private gain. But the proponents of this unitization would say that the taking resulted in or was for the joint use and gain of the owner and the others interested in the unit, and that the taking resulted in no loss to the owner, but, on the other hand, resulted in gain to him. That is nothing more or less than to argue that the taking was not without adequate compensation. But the Constitution, in Art. 2, Sec. 23, prohibits such a taking *with or without compensation.* Thus a violation of this provision cannot be measured by, or condoned on account of, compensation, no matter if the compensation is wholly adequate or even exceeds the value of the property taken. The constitutional inhibition is against such a taking without consent. I submit that a taking in violation of this constitutional provision for the private gain of others jointly with the owner, or such a taking which inures to the benefit of others along with the owner, but against his consent, is just as much a violation as it would be if the taking produced gain solely to others than the owner.

We observe the extensive argument of the over-all benefits of the unitized operation of an oil field or a common source of supply. It may be that in the aggregate the production expense would be reduced and the ultimate recovery of oil be increased. It might be that ultimately each lessee would receive as much money or profit as any one of them could receive by regular private operation.

It might be that ultimately each contract would return as much in royalty payment as any one contract would return under private operation. We do not understand that it is contended to be certain that every lessee and every lessor will receive as much or more under unitization than he might receive under ordinary separate tract or individual management. If it were so contended it would be based somewhat on theory or speculation. In any event, while those items are interesting they are not controlling on the constitutional question. The most we can say here is that a large percentage of the lessees believe this plan to be wholesome and good, and profitable and desirable; that the percentage of lessees who find and believe the plan unprofitable as to them, and grievously undesirable, and think it to be discriminatory and detrimental to their property interest is a small percentage comparatively, yet it is a percentage of large financial investment and of large potential oil value. Likewise, the royalty owners who find the plan objectionable and believe it to be unfair, and find the original calculation of percentage of interest to be discriminatory against them and to be inequitable, represent rights and interests which in the aggregate run into a large sum. Indeed, the royalty interests of some of the landowners may mean more to them than the oil company investment in this area would mean to any one of the companies who as lessees initiated this proceeding, calculated percentages of ownership, and who operate the unit.

This is a large oil field. It appears that the interests owned even by small royalty interest owners may be of substantial value. Certainly the interest of every protesting lessee and of every protesting lessor or royalty owner merits full protection. That full protection under our constitution seems to me to require that each landowner and his lessee be permitted to manage their own premises in drilling for and producing oil therefrom, subject only to reasonable and necessary regulation by the State under its police power. At least that must be our conclusion as con-

cerns any application of this effort to take over this area under the unitization act and plan here considered.

In this jurisdiction we have always gone forward in the conservation of oil and gas and in the protection of correlative rights. The State, through the Corporation Commission, has extensive power in the prevention of waste. I consider it right that the State should have great power to exercise necessary controls in the production and withdrawal of this natural resource. But surely individual enterprise should be encouraged, and individual property rights and contract rights should be upheld. The State should have much power to regulate, and insofar as necessary to restrict and control the production of oil and gas. But it should not be necessary that the State take over production theretofore carried on by landowner and lessee. Much less should it be necessary for the State to authorize a majority group of lessees to take over the operations of other lessees, to the objection and detriment of minority lessees, and over the objection of all royalty owners. We do not mean to say that in this case all of the royalty owners object to this act, or to this plan of unitization, but as we read the act it would make no difference if every royalty owner did object and complain.

On this point it is somewhat significant that some lessees and some royalty owners desire this unitization while other lessors and other lessees object and protest. It would seem inevitable that in final analysis some lessees will obtain a greater return by unitization than they would without it, and that inevitably some lessees will receive less return with unitization than they would without it. The same applies exactly to landowner lessors.

In Carter v. Carter Coal Company, 298 U. S. 238, 80 L. ed. 1160 the Court considered the Federal "Bituminous Coal Conservation Act of 1935" and held the act unconstitutional for some of the objectionable features which find parallel in the State Act here considered. In the opinion (L. ed. 1189) the Court said:

> "The power conferred upon the majority is, in effect the power to regulate the affairs of an unwilling

minority. This is legislative delegation in its most obnoxious form; for it is not even delegation to an official or an official body, presumptively disinterested, but to private persons whose interests may be and often are adverse to the interests of others in the same business. * * *"

This language applies with force to the provisions of this Act which confer power upon the majority in the first instance to say whether the Corporation Commission shall ever acquire jurisdiction. If that is legislative delegation in a very obnoxious form, then how would we characterize the more obnoxious delegation to fifteen-per-cent of the operators to nullify the whole proceedings by a mere protest in sixty days? This protest they may make without showing any reason therefor, or for any reason or for no reason.

In Washington ex rel. v. Roberge, 278 U. S. 115, 73 L. ed. 210, the Supreme Court considered an ordinance in reference to the location of a philanthropic home for children or old people when two-thirds of the owners of property within 400 feet should consent. The Superintendent who passed upon applications for building permits denied the application to build such a home solely because of the applicants' failure to furnish such consents, and in reference to the ordinance the court said on page 214 L. ed as follows:

"The superintendent is bound by the decision or inaction of such owners. There is no provision for review under the ordinance; their failure to give consent is final. They are not bound by any official duty, but are free to withhold consent for selfish reasons or arbitrarily, and may subject the trustee to their will or caprice. Yick Wo v. Hopkins, 118 U. S. 356, 366, 368, 30 L. ed. 220, 225, 226, 6 Sup. Ct. Rep. 1064. The delegation of power so attempted is repugnant to the due process clause of the 14th Amendment. Eubank v. Richmond, 226 U. S. 137, 143, 57 L. ed. 156, 158, 42 L. R. A. (N. S.) 1123, 33 Sup. Ct. Rep. 76,

Ann. Cas. 1914B, 192; Browning v. Hooper, 269 U. S. 396, 70 L. ed. 330, 46 Sup. Ct. Rep. 141."

Applying that rule to the act before us the Corporation Commission is bound in the first instance by the decision or inaction of 50 to 51 percent of the oil operators or lessees. The State, acting through the Corporation Commission, may not take an initial step toward this exercise of the police power for conservation of oil until and unless fifty-percent of the operators will it to be so. Thus, 51 percent or 50 percent plus, may in every instance prevent even the inception of a proceeding looking toward conservation of oil and gas by unitized operation.

And as to continuing jurisdiction of the Corporation Commission and as to continuation of the operation under unitization, the Corporation Commission is bound for sixty days by the decision or inaction of lessees of fifteen-percent of the area. The lessees or operators above mentioned, in exercising their preference or their will in the instances above stated, are not bound by any official duty, but are free to act or withhold action for private or selfish reasons or arbitrarily, and to the extent just noted they may in fact subject the unitization proceedings to their will or caprice.

It seems clear to me that this court should conclude this delegation of power so attempted to be repugnant to the due process clause of the Constitution.

In Eubank v. Richman, 226 U. S. 137, 57 L. ed. 156, the Supreme Court considered a city ordinance enacted under a statute of Virginia which ordinance provided, in substance, that when the owners of two-thirds of property abutting on any street should request it, a committee on streets should establish a building line not less than 5 nor more than 30 feet from the street line, with provision for penalty for violation of such property line establishment. The State Court upheld the legislation, but the United States Supreme Court held that it violated the 14th Amendment to the Federal Constitution in that such enact-

ment amounted to a deprivation of property without due process of law, and denied equal protection of the law.

Applying that rule here I must conclude that this act is equally invalid. It deprives operators and landowners of property without due process of law, and it likewise deprives some operators and all of the landowners or owners of royalty interests of equal protection of the law.

While the original 50% petition requirement standing alone would not or might not invalidate the act, it must be considered along with the other provisions as to the 15% veto power, and as to complete exclusion of all others than lessees. When so considered the 50% petition provision is some indication or demonstration of the over-all length to which the act goes. And when all provisions of the act are considered we must hold that the length to which it goes transcends legal and constitutional authority.

As touching upon these points our attention is directed to various provisions included in our statutes under the title on "WATERS AND WATER RIGHTS." (Title 82 O. S. 1941). Those provisions deal with the making of various property improvements such as irrigation, drainage, flood prevention, stream channel control, land reclamation, and the like, and the construction of public water works. Since the cost of such improvements must be borne by the property owners or persons interested they are given voice as to whether the project shall exist or not. Those provisions bear no strict analogy to the act here involved. Those provisions are more nearly analogous to principles or provisions of general government where the will or wishes of the people govern as in the creation of some of our municipal subdivisions or the voting of bonds for improvements or utilities.

For the reasons stated, we conclude that the act violates Art. 2, Sec. 7 of the Constitution in that said act operates to deprive persons of property without due process of law, and said act violates Art. 2, Sec. 15 of the Constitution in that it operates to impair the obligation of contracts, and said act violates Art. 2, Sec. 23 of the Constitution in that it operates to take or damage private property for

private use, and specifically authorizes the taking and using of private property for private gain without consent of the owner, and said act violates Art. 2, Sec. 24 of the Constitution in that its operation purports to take private property for public use without just compensation, and said act violates Art. 4, Sec. 1, and Art. 5, Sec. 1 of the Constitution in that it purports to accomplish an unauthorized delegation of the legislative power and of the police power of the State.

It is suggested the conclusion that this compulsory unitization act is unconstitutional might destroy or deny or in some manner impinge upon the power of the Legislature generally to regulate the coequal rights of owners or operators to take oil and gas from a common source of supply. However, such result would in no sense be accomplished or indicated or intended. The Legislature does have such power, including the power to make private contracts conform to or submit to the necessary police power of the state, and has well exercised that power in providing for "well spacing" and "proration," and in making the various other provisions under which the taking of oil and gas by any and all persons entitled to take it is regulated. This case concerns only the authority of the Legislature to deal with such conservation and such rights *in the manner in which this act deals with such subjects.* In that consideration the test is whether the act is violative of constitutional provisions. This court must not substitute court views for legislative views as to methods of conservation or protection of coequal rights, but this court must discharge its duty to measure this act by the constitutional requirements as to the protection of all rights.

No decision is cited which has upheld such an act or anything like it.

I am authorized to say that Vice Chief Justice Luttrell, and Mr. Justice Davison and Mr. Justice O'Neal concur in this dissent.

IN THE SUPREME COURT OF THE STATE OF OKLAHOMA

No. 33336

THE PALMER OIL CORPORATION, A CORPORATION, ET AL,
Plaintiffs in Error,

v.

PHILLIPS PETROLEUM COMPANY, A CORPORATION, ET AL.,
Defendants in Error.

and

No. 33708

PAUL STERBA AND PAUL STERBA, JR., A MINOR, BY AND THROUGH HIS FATHER AND NEXT FRIEND, PAUL STERBA, AND THE PALMER OIL CORPORATION, A CORPORATION,
Petitioners,

v.

CORPORATION COMMISSION OF OKLAHOMA, ET AL.,
Defendants.

DAVISON, J., Dissenting:

I concur in the dissent written by Mr. Justice Welch.

I believe the majority opinion goes much farther than any opinion ever written on the subject of conservation under the police power of the state. If the Act in question and the order of the Corporation Commission thereunder can stand at all it is only because of the proper exercise of police power for the conservation of oil and gas and the prevention of waste thereof. Many decisions hold, however, that such power must be reasonably exercised, and that private rights should not be interfered with to a greater extent than is reasonably required by a proper exercise of the power, taking into consideration the legitimate object to be accomplished. Orison Oil Corp., et al. v. Corporation Commission, 186 Okl. 548, 99 P. 2nd 134. Under the record involved herein, I am of the opinion that

the power exercised by the Corporation Commission is unreasonable, unjust and unfair.

O. S. A. Title 52, section 286.6 of the Act in question provides, as follows:

> "If at any time after the filing of a petition for the creation of a unit and within sixty (60) days after the entry of an order by the Commission approving the creation of the same, lessees of record of fifteen percent (15%) or more of the proposed unit area, if prior to the entry of the order by the Commission, or lessees of record of fifteen percent (15%) or more of the unit area as defined by the approved plan of unitization and order of the Commission, if after the entry of such order, shall file written protest with the Commission against the creation of the unit, the Commission shall vacate all action of any kind theretofore taken and dismiss the proceedings for the creation of such unit."

This provision of the Act denies lessors equal protection of the law. The Act gives a percentage of the lessees alone the opportunity to instigate proceedings for a proposed unit area, and at the same time affords fifteen percent of the lessees the right to nullify the proceedings. It therefore gives the lessees the vehicle to promulgate a unit area, and in the same clause gives the lessees another vehicle with which to backpedal therefrom and annul all proceedings thereunder. By this provision it appears the Act creates an improper delegation of the police power and legislative power of the State to the will and opportunities of oil operators or lessees. The Act is therefore legislation which benefits the individual lessees and operators rather than being a conservation measure.

The cases relied on in the majority opinion involve the pooling or spacing of small or irregular shaped tracts while the unit involved herein covers approximately 3700 acres of land consisting of 72 separately owned tracts with several hundred royalty owners.

I am of the opinion that the legislature, by the passage

of the referred to act has created a Frankenstein, under the guise of conservation.

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Defendants.

O'NEAL, J., Dissenting:

I agree with the views expressed by Mr. Justice Welch in his dissenting opinion.

It is my judgment this unitization act under the guise of preventing waste in the production of oil and gas from the earth transcends, to an unwarranted and unreasonable degree, regulation of the production of natural resources, and enters the forbidden zone of taking property out of the hands of the owners and placing it in the hands of third persons as individuals and not as a state instrumentality for the purpose of operation, without the consent of and in violation of their rights.

As I view this Act, it is an improper, unjustified and illegal delegation of police power by the state to private individuals, or corporations acting in a private capacity,

as distinguished from acting in the capacity of a duly constituted state instrumentality, answerable to the state. It may be that the state may create a state instrumentality and vest it with the police power for such purpose, making it answerable to the state for its activities and results, but certainly the state has no power under its constitution, or the constitution of the United States to delegate the police power to private individuals or private corporations for such a purpose, or for that matter, any purpose.

APPENDIX "B"

PETITION FOR REHEARING

IN THE SUPREME COURT OF THE STATE OF OKLAHOMA

No. 33336

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PETITION FOR REHEARING

COMES NOW The Palmer Oil Corporation and Paul Sterba and Paul Sterba, Jr., a minor, by and through his father and next friend, Paul Sterba, and petition the Court

in this consolidated cause to grant them a rehearing from the decree in judgment rendered by this court on March 20, 1951, affirming in Case No. 33336 the order of the State Corporation Commission made in Cause No. 20289, and denying in Case No. 33708 petitioners' original petition for a writ of prohibition, and, as grounds for this petition for rehearing, state and show to the Court:

We desire to briefly refer to and comment upon certain material facts and contentions appearing in the record and presented in brief and oral argument, which the majority of the Court, as reflected by its opinion, overlooked, or to which it gave improper consideration. The more important of these facts and contentions, insofar as they relate to the constitutional questions involved, are as follows:

I.

The majority of the Court apparently failed to consider the pertinent facts, reflecting the destruction of the rights of The Palmer Oil Corporation by this compulsory unitization.

The first producing oil and gas well in the West Cement Field in Caddo County, Oklahoma, was completed on October 17, 1917. On February 18, 1936, Paul Sterba, and others, being the then owners of the Southwest Quarter of Section 35, Township 6 North, Range 10 West, Caddo County, Oklahoma, executed an oil and gas lease running to Gulf Oil Corporation. Gulf Oil Corporation thereafter, and in September, 1938, sold and assigned its rights under the oil and gas lease, to a depth of 6,000 feet, to The Palmer Oil Corporation, Gulf also retaining an overriding royalty. Neither said lease nor any instrument relating thereto provided for unitization or pooling of the premises with any other leases. Palmer immediately drilled several oil and gas wells on the premises, producing from zones above the Medrano Sand.

The first production of gas from the Medrano Sand Bodies of the West Cement Field occurred in October, 1936, from the Southwest Quarter of Section 36, Township 6 North, Range 10 West, and production of oil from Me-

drano Sand Bodies was first discovered in March, 1943, in the Southeast Quarter of Section 35, Township 6 North, Range 10 West.

The rights of Palmer and Sterba were vested and fixed long before the Unitization Act was passed in the year 1945, and Palmer had, in fact, by October 22, 1946, drilled six oil and gas test wells on the Sterba lease, two producing from the Medrano Sand Bodies when the Unitization Act, and its ill-begotten child, the written Plan of Unitization, sired by Phillips Petroleum Company, and other major operators, was presented for christening to the Oklahoma Corporation Commission, which, having no power but to kill or let live, gave its blessing and christened the baby "The West Cement Medrano Unit" on September 5, 1947. During the pendency of the proceedings before the Oklahoma Corporation Commission on the petition to establish the written Plan of Unitization, Palmer drilled and completed a third oil well producing from the Medrano Sand Bodies and this third well is made reference to in the opinion of the majority Court.

The written Plan of Unitization covered the several separate uncommunicable Medrano Sand Bodies under an area containing approximately 3700 contiguous surface acres, extending from the southeast to the northwest, in excess of five miles, with greatest width from north to south of approximately three and one-half miles. The Sterba-Palmer lease is near the center and in the most productive portion of the unit area.

Although Palmer's surface ownership was only approximately 4% of the unit surface area (not being a sufficient per cent to protect itself and any of the provisions of either the Unitization Act or the Plan of Unitization), yet the division of interest formula used in connection with the written Plan of Unitization shows that Palmer owned a very valued property right in excess of 5,000,000 barrels of oil in place under its lease, and was under the Plan originally allowed 5.145% of the production from the unit area, which, after the drilling and completion of the third well above mentioned, was increased to 5.51614% interest,

the increase representing in excess of 175,000 barrels of oil in place.

It is Palmer's developed valuable rights in the Sterba lease and the oil and gas thereunder and the business of producing and selling the same that was completely taken away from it by the Plan of its competitors approved by Commission's Order of September 5, 1947, and placed in the hands of private parties, Palmer's competitors, which have been operating the same since December 7, 1947.

II.

The majority opinion states:

> "Involved on the appeal are two major questions. One, the constitutionality of said sections of the statute which, as a whole, constitute what is known as the Unitization Act (H. B. 339 of the 1945 Oklahoma Legislature). The other, the legality of the order of the Commission if authorized under the Act to effect unitization. These questions will be considered in the order stated. . . .
>
> "On behalf of the lessees it is contended that the Act is violative of Art. II, Sections 7, 15, 23 and 24 of the Constitution of the State of Oklahoma, and of Art. I, sec. 10, of the Fourteenth Amendment to the Constitution of the United States. For the purpose of the presentation, there is no segregation of the contentions as to each of said constitutional provisions for the expressed reason the grounds relied on have common application to all. Two grounds are relied on. One, the Act as a whole is unreasonable. The other, the Act constitutes an unauthorized delegation of legislative power."

From the above quoted portions of the majority opinion, it appears that the majority of the Court:

(a) misconceived the nature of the constitutional issues presented and argued by plaintiffs in error, and

(b) limited its consideration to the abstract provisions of the Unitization Act and did not consider the manner of

its application to the facts and circumstances of this case.

In order to eliminate any doubt in these respects, plaintiffs in error contend:

That House Bill No. 339 of the 1945 Legislature (Title 52 O. S. Supp. 1947, Secs. 286.1 to 286.17, both inclusive), known as the Unitization Act, and the Order of the Corporation Commission of Oklahoma approving the written Plan of compulsory unitization of the several Medrano Sand Bodies in the West Cement Fields, Caddo County, Oklahoma, as interpreted and applied to the operations of Palmer and other plaintiffs in error, under the undisputed and indisputable evidence in the record, *is an improper and unreasonable exercise of the police power* and thereby (1) constitutes an unlawful delegation of legislative power to private persons or groups in violation of Section 1, Article 4, and Section 1, Article 5, of the Oklahoma Constitution; (2) deprives plaintiffs in error of their property without due process of law, and denies plaintiffs in error the equal protection of the law in violation of Section 7, Article 2 of the Oklahoma Constitution and the Fourteenth Amendment of the Constitution of the United States; (3) impairs the obligations of preexisting contracts and takes the private property of plaintiffs in error without their consent, without compensation and for private use in violation of Sections 15 and 23, Article 2 of the Oklahoma Constitution and Article 1, Section 10 of the Constitution of the United States.

The over-all constitutional question involves not only a consideration of the abstract provisions of the Unitization Act, but the manner of its application, which includes each and all of the following considerations, none of which can be separately treated or unrelated to the whole:

(a) The abstract provisions of the Unitization Act.

(b) The Written Plan of Unitization formulated by Phillips Petroleum Company, and others, and which, when approved by the Commission also became law.

(c) The Findings of Fact and Order of the Commission.

(d) All of the facts and circumstances of the case.

III.

The majority of the Court further states:

> "The substance of lessees' ground one is that the Act is unreasonable because it does not require as a condition to the establishment of the unit a finding by the Commission, that for the purpose of conservation, the application of the Act will be more effective than that of the existing laws."
>
> "There is no contention that the standards prescribed are insufficient in any respect other than in not including the suggested findings. Therefore, it necessarily follows that the contention challenges the authority of the Legislature in dealing with matters of policy, which is a realm without the scope of judicial inquiry."

The majority of the Court, as shown by the quoted portion of its opinion, evidently concluded that the constitutional issues were limited to one ground, i. e. that the Corporation Commission could, under the provisions of the Unitization Act, apply the same and the Written Plan of Unitization, without a finding that such Unitization and Plan would accomplish greater conservation than that permitted under existing laws. It is reiterated that the issues presented and argued *were not limited to any one ground but were based on many grounds.*

The majority of the Court, as shown by the quoted portion of its opinion, stated that plaintiffs in error did not question the validity of the so-called "standards" set forth in Section 286.4 of the Unitization Act. Such statement, we respectfully present, is in error. Plaintiffs in error have at all times argued that the so-called standards were not standards at all and that the Unitization Act, as applied in this case, *was an unreasonable exercise of the police power*, because:

(a) It had a retrospective operation and seriously disrupted existing and vested rights. (Our brief 317 and 318).

(b) It would serve no purpose in respect to the Medrano

Sand Bodies since more than 2/3rds of the gas energy had already been exhausted. (Our brief 317-318).

(c) It could not be any more effective for conservation purposes than the general conservation laws. (Our brief 318-321).

(d) The so-called "standards" set forth in Section 286.4 are too broad, vague, and unspecific to constitute any guide to the Commission. (Our brief 318-321).

(e) It did not become effective unless proceedings were initiated by at least 50% of lessees of surface area who not only had the exclusive power to initiate the proceedings, but also formulated and presented the Written Plan of Unitization. (Our brief 320).

(f) The Unitization Act and the Written Plan approved could be nullified within sixty days by 15% of the lessees of the surface area. (Our brief, 320).

(g) The Unitization Act and the Written Plan of Unitization in this case was designed in the interest of the major operators who could always control the formulation, application and operation of the law. (Our brief, 320-321).

(h) The Unitization Act provides not for mere rules and regulations, but is the definite taking over of the management and control of large oil fields at the will of certain percentages and without the consent of unwilling minorities, which constitutes an annihilation of the rights of small operators. (Our brief 326, 330).

In fact, the constitutional issues are not limited to the above contentions.

For instance, Mr. Justice Welch, in his well reasoned and able dissenting opinion, sets forth and discusses many constitutional objections which are apparent from the record, and by reference we wish to incorporate the contents of his opinion and the dissenting opinions of Mr. Justice Davison and Mr. Justice O'Neal herein.

IV.

In order that there may be no further misunderstanding in respect to the constitutional issues raised, plaintiffs in error desire to amplify some of the more important constitutional issues which are apparent from the record, and were presented by brief and oral argument.

(A) The majority of the Court stated in its opinion:

> "No rights have been exercised under the 15% provision of Section 286.6 though its validity is questioned here. It is unnecessary to determine the constitutionality of this provision at this time. The same is true of the 10% provision of Section 286.11 providing for reconsideration by the Commission of the Plan and operation and fixed correlative rights thereunder. These undetermined questions are reserved."

To say that it is unnecessary to determine the constitutionality of this provision at this time with reference to the fifteen percent provision of Section 286.6 constitutes an evasion of the construction of the statute, because it is the Unitization Act as a whole, as applied in this instance in conjunction with the Plan of Unitization conceived by private parties, that destroys and violates the constitutional rights of plaintiffs in error. While the pronounced purpose of the Act (Sec. 286.1) may be laudable, the subsequent portions of the Act and of the Plan of Unitization—its ill-begotten child—are disastrously destructive of the constitutional rights of plaintiffs in error. Such a statute and such a Plan, when so considered, are not unlike an egg. It cannot be part good and part bad. In this instance, it is all bad.

It was never contended by any party to these proceedings that Section 286.6 or Section 286.11, or any other section, could be separated from the Unitization Act as a whole, despite the provision of Section 286.16. All parties understood the Unitization Act as being a special and exceptionally drastic type of legislation, which would have a separate and different application, depending upon the

form of Written Plan of Unitization, to each different oil field in the State of Oklahoma, if applied. Since this exceptionally drastic type of legislation, where applied, would necessarily have a continuous and day to day application, it should not be considered piecemeal, but as a whole.

The question of separability having appeared in this for the first time in the opinion of the majority of the Court, petitioners in error urge that it is only right and proper that they should have a full opportunity to present and argue the question of separability.

The majority of the Court, having disregarded Section 286.6 (15% provision) and Section 286.11 (10% provision), assuming erroneously said provisions are not in issue and separable, it must be assumed that the majority of the Court would likewise disregard Section 286.12 (15% provision on enlarging unit) on the same ground. Not anticipating such lack of the construction of the express provisions of the statute, plaintiffs in error seriously [illegible]e a rehearing so that the majority of the Court can carefully consider similar issues involving control by private parties on a percentage basis under the express terms and provisions of the written Plan of Unitization, as follows:

(1) The Order of the Commission and the written Plan of Unitization could have been nullified merely by the failure of the Unit Committee by a vote of 66⅔ percent to take over operations under the unit within three months from the date of the Order. (See Section 9 of the written Plan). In fact the Unit Committee, in taking over the unit operations on December 7, 1947, barely escaped this nullification by two days. Will the majority of the Court say that this provision of the Plan is not in issue and separable?

(2) The day to day operations under the unit are not supervised or controlled by the Corporation Commission, but are handled by the Unit Operator, subject to vote of 66⅔ percent of the Unit Committee, except on the question of removing the Unit Operator, in which event a 75 percent vote is required. Here again, a percentage in

interest controls. Is this express provision of the Plan to be held not in issue and separable?

(3) Sections VIII, XIV and XV of the Plan of Unitization permit the Unit Operator, subject to 66⅔rds percent vote of the Unit Committee, to produce all of the oil from the unit from any one lease and to abandon such depleted lease. Is this provision not in issue and separable?

(4) The Unit Operator may produce oil disproportionately from the Palmer-Sterba lease for the benefit of the other leasehold owners within the area and then, subject to vote of 66⅔rds percent of the Unit Committee, abandon from the unit such other leases as have not been depleted by production, the owners of such abandoned leases gaining participation in the production from the Palmer-Sterba wells and the return of their own undepleted leases. Actually, the Unit Operator has produced oil disproportionately from the Palmer-Sterba lease, producing up to 11 percent of the total unit production (see Application for Writ of Prohibition) from this one lease, whereas Palmer's unit assigned interest in the total unit production is approximately 5.5 percent. Is this control by percentage not in issue and separable?

(5) Under Sections XV and VIII of the Plan of Unitization the Unit Operator, upon vote of 66⅔rds percent of the Unit Committee, can incur any expense its pleases in the further development or operation of the unit, drill, plug or abandon any well or wells it desires, may abandon or change all method or methods of operation in whole or in part at any time, may completely abandon the unit, dissolve and wind up its affairs at any time. Are these express provisions of the Plan of Unitization not in issue and separable?

Although the majority of the Court has disregarded the arbitrary percentage provisions of the Unitization Act referred to above, certainly the majority of the Court, upon further consideration, cannot disregard the arbitrary and unreasonable percentage provisions as set forth in the written Plan of Unitization. The written Plan of Unitization is an unreasonable exercise of the police power, by

reason of the fact that a certain percentage of the Unit Committee, as private individuals, have the power to exercise arbitrary and unreasonable power without limitation. In other words, the compulsory unitization is not a unit born of or controlled by provisions of the law, but rather a unitization depending upon the will of private individuals who control percents as stated of the vote of the Unit Committee.

(B) The Unitization Act applies only upon a petition being filed by 50 percent (meaning 50 percent of the surface area) of the lessees who also formulate and present with the petition, the written Plan of Unitization. The Corporation Commission cannot breathe the breath of life into the Unitization Act, or any Plan of Unitization thereunder; this can only be done by 50 percent of the lessees in the area of the assumed common source of supply. In other words, certain percentages of private parties not only initiate the proceedings, but actually formulate the law which is to control a particular oil and gas field. This is not only discrimination, it is an unauthorized delegation of authority (legislative and the exercise of police power), to private individuals. The majority of the Court, in its opinion with reference to this question, states:

> "In the first place the power so granted can neither establish or disestablish the unitization when established because the power of establishment rests with the Corporation Commission. In such situation there is not a trace of legislative power exercised."

We submit that the quoted portion of the opinion is an incorrect interpretation of the statute. The Corporation Commission has no power to initiate the proceedings, nor to formulate the Plan of Unitization. If the Corporation Commission rejects the Plan, nothing is accomplished. Therefore, the only real authority of the Corporation Commission is to apply the Unitization Act in accordance with the Plan petitioned for and submitted by 50 percent of the lessees by area. This is far different than the matter of determining whether certain legislation should become

effective upon certain conditions. Since this case was argued before the Supreme Court, an annotation on the delegation of authority to private individuals has been published in 3 ALR (2d) 188. This annotation clearly shows that where a percentage of private individuals not only initiate but formulate the legislation, the same is invalid and constitutes the most vicious type of unauthorized delegation of power to private individuals.

(C) The basic fact or major premise permitting conservation legislation which involves the adjustment and protection of correlative rights, is the existence of a *single common source of supply.* Therefore, if the Unitization Act did not have the provision (Sec. 286.2) limiting its operation to a common source of supply, the Act, without more, would be definitely violative of the Constitution of the State of Oklahoma, as well as the Constitution of the United States. See *H. F. Wilcox Oil & Gas Co.* v. *State,* 162 Okla. 89, 19 P. (2d) 347; *Mars* v. *Oxford,* 32 F. 2d 134, cert. denied 280 U. S. 563, 50 S. Ct. 24, 70 L. ed. 617, and *Ohio* v. *Indiana,* 177 U. S. 190, 20 S. Ct. 576, 44 L. ed. 729.

There is no provision in the Act any where which expressly grants the right to the Corporation Commission to determine such basic fact or major premise, namely, the existence of a single common source of supply. Nevertheless, that issue was raised by plaintiffs in error and was the most serious factual issue in the entire case.

The majority of the Court is correct in holding that the only evidence supporting the finding of the Corporation Commission that there was a single common source of supply was pure opinion evidence. In other words, the basic and fundamental fact—the existence of a single common source of supply, is, in the very nature of things, only an uncertain conclusion because it concerns a situation which may or may not exist 6,000 feet underneath the surface.

It is contended that any police power statute or regulation, the life and validity of which depends upon the determination of a fact or condition which is not susceptible of positive determination, should not be enforced upon

non-consenting parties and their private rights where there is any reasonable dispute. In this case the existence of the basic and fundamental fact is seriously in dispute and cannot be definitely proved, but merely concluded on the basis of opinion evidence. It is arbitrary and unreasonable to impose the statute and the Plan of Unitization upon the expert opinion of one witness as against the expert opinion of other witnesses equally well qualified.

(D) The division of interest formula had many unfair and unreasonable features which were argued at length. (See our brief 278-297). This division of interest formula must be considered as much a part of the Unitization Act in this case as any other express provision. The facts and circumstances concerning the application of this formula were undisputed and showed that the formula in many instances had no reasonable or scientific support in any respect. On the constitutional issues the majority of the Court gave no consideration whatever to the objections presented to this division of interest formula.

(E) Plaintiff in error contended in brief and on oral argument that all the facts and circumstances of the case had to be considered in connection with the constitutional issues. The majority of the Court again interpreted such contentions as being restricted to the sufficiency of the evidence. *This was not our intention.* There was no conflict in the known facts. The only questions were the interpretation or conclusions to be drawn from the known facts. Therefore, when the undisputed facts disclose that the Plan of Unitization was unreasonable in any respect, the whole Plan and the Unitization Act likewise became unreasonable. In other words, when it was argued in plaintiffs in error brief that there was not a single common source of supply (Brief 231-252), or that the proposed unit area had not been reasonably defined (Brief 258-269), or that the proposed Plan of Unitization was not suited to the needs and requirements of the proposed unit and unit area (Brief 269-270), or that the proposed Plan of Unitization was not fair, reasonable and equitable (Brief 277-278), or that the formula for the division of interest

was not generally fair, equitable or reasonable (Brief 278-297), or that the evidence showed that the Plan of Unitization was particularly unfair, inequitable and unreasonable as to the rights of The Palmer Oil Corporation (Brief 297-307), it was intended that these contentions would apply with equal force to the broad and general contention that the Unitization Act, as applied, (which includes the Unitization Act, the written Plan of Unitization, the Order of the Commission approving the Plan, and all other facts and circumstances), was an *unreasonable and unwarranted exercise of the police power.*

V.

The majority of the Court endeavors to distinguish the present case from the controlling decision in the case of *Carter* v. *Carter Coal Company,* 298 U. S. 238, 80 L. ed. 1160, and *State of Washington, ex rel.* v. *Roberge,* 278 U. S. 116, 73 L. ed. 210, in the following language:

> "In the Carter case the donees of the power were given authority to make decisions determinable of the rights of others and in the Washington case the donees were given an arbitrary power to veto the exercise by others of their unquestioned rights. neither situation obtains herein."

We submit that the quoted portion of the majority opinion emphasizes the analogy between the present case and the Carter case and the Washington case, and shows no distinction whatsoever.

The majority opinion then quotes at length from *Currin* v. *Wallace,* 306 U. S. 1, 83 L. ed. 441, in an effort to show that legislative enactments may be made conditional upon the will of certain percentages in interest. The Currin case is far from being in point. In the first place, the Currin case involved legislation enacted by Congress under the commerce power, in which case equality is not required. The Supreme Court in that case, in its own opinion, stated:

> "There is no requirement of uniformity in connection with the commerce power . . . undoubtedly the exercise of the commerce power is subject to the Fifth amendment . . .; but that amendment unlike the Fourteenth, has no equal protection clause."

In the second place, the legislation in the Currin case was complete inspection legislation which, if made effective in a particular market, was entirely subject to and under the supervision of the Government.

In the case of the Unitization Act, the Plan of Unitization is formulated by a percentage of private interests, is presented by a percentage of private interests, is made effective, operated and concluded by a percentage of private interests. The only part that any Governmental Agency plays in connection with the Unitization Act is to either reject or approve the Plan submitted without any definite or certain guides or standards.

Conclusion

However laudable may be the pronounced purpose of the passage of the Unitization Act, and however the public good might possibly be served by compulsory unitization of an oil field, no public or governmental agency is empowered by the Unitization Act to create or maintain in being such a unit. Under the Unitization Act these rights are delegated solely to private parties with the exercise thereof within the voluntary discretion of the percents of interests of such private parties as expressed in the Act and in the private parties' own creation—the Plan of Unitization. This House of Babylon must crumble and fall by its own weight.

It is respectfully submitted that this Petition for Rehearing should be granted.

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APPENDIX "C"

APPLICATION FOR LEAVE TO FILE SECOND PETITION FOR REHEARING AND BRIEF IN SUPPORT THEREOF

IN THE SUPREME COURT OF THE STATE OF OKLAHOMA

No. 33336

THE PALMER OIL CORPORATION, a corporation, et al.,
Plaintiffs in Error,

v.

PHILLIPS PETROLEUM COMPANY, a corporation, et al.,
Defendants in Error.

and

No. 33708

PAUL STERBA and PAUL STERBA, JR., a minor, by and through his father and next friend, PAUL STERBA, and THE PALMER OIL CORPORATION, a corporation,
Petitioners,

v.

CORPORATION COMMISSION OF OKLAHOMA, et al.,
Defendants.

APPLICATION FOR LEAVE TO FILE SECOND PETITION FOR REHEARING

Come now The Palmer Oil Corporation, Paul Sterba and Paul Sterba, Jr., a minor, by and through his father and next friend, Paul Sterba, and respectfully pray leave of Court to file second petition for rehearing in these consolidated cases, and as grounds therefor show the Court as follows:

1.

The majority opinion of the Court in holding that under this record there has been no unconstitutional delegation of legislative power has failed to differentiate between legislative enactments which fix and determine a policy of the state and simply delegate to others the enforcement of such predetermined policy in the administration of the Act and the situation here, where the propriety or advisability of determining policy with respect to a given area is dependent upon the will and caprice of a majority of affected owners.

2.

The majority opinion ignores the fact that under the terms of the Act Royalty owners are deprived of their property without due process of law. This result flows from the fact that the Act completely ignores their rights and permits the Corporation Commission, by approving a plan of unitization, to deprive them of valuable rights in a proceeding to which they are not parties, and of which no notice to them is required.

Respectfully submitted,

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BRIEF IN SUPPORT OF APPLICATION FOR LEAVE TO FILE SECOND PETITION FOR REHEARING

Point I

The Unitization Act Constitutes An Unwarranted and Unconstitutional Delegation of Legislative Power

In the majority opinion, the contention that the Act is unconstitutional because it constitutes an unauthorized delegation of legislative power is disposed of on the authority of cases which, in effect, hold that a legislative body, having once adopted a policy, may (1) delegate to an executive or agency the power and duty to enforce the policy, or (2) make the enforcement of the policy dependent upon the consent of a portion of the affected individuals.

The Act in question does neither. Although it contains recitations calculated to support it as an exercise of the police power, it does not fix the policy of the state. Rather, it says that the Corporation Commission may fix and determine the policy after a hearing, but jurisdiction of the Commission itself to either determine or carry out the policy is dependent upon the initiation of a request therefor by fifty per cent of the affected parties. It is perfectly clear that the Legislature has in effect said, "It may be advisable, depending upon circumstances, to subject certain producing areas to unit operation. The Legislature is not equipped with facilities to obtain the information necessary to determine the propriety of so doing. Consequently, we will vest in the Corporation Commission the power to make such determination."

Had the Legislature stopped at this point, the validity of the Act might have been sustained under the authorities cited in the majority opinion. However, the Legislature went further and made the question of determination dependent upon the will of lessees of record of fifty per cent or more of the area sought to be unitized. No case has been cited by counsel, and in our judgment none can be cited, in which a determination of legislative policy de-

pends upon the will, whim or caprice of any percentage of the affected parties.

Although put in slightly different language, Federal District Judge Akerman, in Chester C. Fosgate Co., et al. v. Kirkland, et al., 19 Fed. Supp. 152, struck down a marketing agreement entered into pursuant to the Federal Agricultural Adjustment Act, 7 U. S. C. A., Sections 601 to 610, inclusive. That Act authorized the Secretary of Agriculture to promulgate a handling order which should be binding upon all handlers of agricultural products upon the execution of an agreement signed by fifty per cent of the handlers. Although the Act provided an alternative method by which an order might be made without the agreement of the statutory fifty per cent, the Court concluded, in view of all of the provisions of the Act, such an agreement was a necessary requirement, and, in holding it to constitute an unwarranted delegation of legislative power, said:

> "Since the marketing agreement must be signed by 50 per cent. of handlers, and also by the Secretary, each occupies the position of a separate branch of the legislative body. Such delegation of authority to a part of those engaged in a particular industry has lately been condemned by several decisions of the Supreme Court of the United States, and by several decisions of the State Supreme Courts."

Numerous cases are cited in support of the conclusion, after a discussion of which the writer of the opinion concludes:

> "To permit the handlers of 50 per cent of the volume of any commodity to have such power in the making of a marketing agreement, which when approved by an order of some executive official shall have the force of law, is to my mind exactly what the Supreme Court said it is, namely, 'Legislative delegation in its most obnoxious form,' and in consequence, constitutes a violation of the Fifth Amendment to the Federal Constitution."

Just as it was necessary in the cited case to have, First, the concurrence, consent or agreement of fifty per cent of the parties involved, and in addition an order by the Secretary of Agriculture, under the Act here involved it is necessary to have, first, a petition filed by 50 per cent of the affected lessees, and second, an order of the Corporation Commission approving it.

Other cases to the same effect are collected in 3 A. L. R. (2d) 188. Concerning such cases the annotator says:

> "Statutes which lodge the power to initiate administrative legislation on prices, wages, or hours exclusively in private groups and limit the power of the appropriate administrative agency to approval or disapproval of such legislation, in some instances without authorizing them to modify or revise it, have been held invalid as an improper delegation of legislative power in a number of cases."

Of other cases, which include those from this Court relating to price legislation, the annotator says:

> "On the other hand, where a statute authorizes the appropriate administrative agency to enact, upon its own initiative, legislation on prices, wages, and hours under adequate standards fixed by the statute, it is not, merely because it authorizes also private groups to initiate such legislation, subject to the objection that it improperly delegates legislative power to private groups."

Another group of cases, in which Currin v. Wallace, 306 U. S. 1, heavily relied upon by the majority, falls, is discussed by the annotator, who recognizes the clear distinction between such cases and those like the case at bar. The distinction is plain and simple. As pointed out in the Currin case, a legislative body may place restrictions upon the operation of its own regulations by including as a condition the approval of a group of affected parties. However, as we have pointed out, the Legislature has not in this case imposed any restrictions upon the operation of

an ascertained policy, but has in effect authorized the Corporation Commission to impose restrictions contingent upon a petition therefor by a percentage of private parties. We unhesitatingly reassert that there is no case which approves such a delegation of legislative authority.

We also feel that no court should ever hold that a legislative body may delegate to another legislative body the power to adopt a policy provided that fifty per cent of the affected class desire the adoption of a policy relating to a given subject. Frankly, we think that this Court, in approving the legislation, overlooked the fact that thereunder the adoption of a policy, and not the enforcement thereof, is wholly dependent upon the wishes of fifty per cent of the affected parties, who may invest the Corporation Commission with the power so to do, or deprive it of such power, with or without reason, cause or justification.

We therefore respectfully submit that the authorities relied upon do not support the conclusion of the Court, that there are no authorities which do, and that the present majority opinion is in conflict with all well considered cases which have dealt with similar questions.

Point II

The Act Is Violative of the Due Process Clauses of the State and Federal Constitutions

In the majority opinion, the position of royalty owners is considered only from the standpoint that they are not afforded the same right of protest as are their lessees. It is stated, however, after pointing out that they may be inaccessible and could afford little, if any, helpful information if available, "But they are granted the right of an appeal from the action of the Commission, and this case is an example of its exercise."

This treatment and disposition of the interests of the royalty owners completely overlooks the fact that whether they are accessible or inaccessible, whether they might provide helpful information, once a proceeding is initiated

by fifty per cent of their lessees, or not, they do have extremely valuable rights which are affected by any unit plan of operation. To hold that they may be deprived of their rights and have their property taken away in a proceeding to which they are not even parties is unthinkable. No one would deny that under the unit plan here approved, many of the royalty owners have been deprived of substantial property rights. It is true that some of them, in an effort to protect their rights, by leave of the Corporation Commission, appeared and asserted them. They were able to do so only by the grace of the Commission. Under no provision of the Unitization Act are they necessary parties to the proceeding, nor is there any provision in the Act for notification of the pendency of any such proceeding. The present opinion, which so lightly brushes aside the total failure of the Act to take their rights into account, is contra to the basic concept that no person shall be deprived of his property without due process of law.

One of the latest cases in which the sanctity of property and property rights is again emphasized, is Mullane v. Central Hanover Bank & Trust Co., 339 U. S. 306. There was involved in that case a statute of the State of New York which authorized the trustee of a collective trust to procure a judicial settlement of its accounts with beneficiaries in a proceeding brought for that purpose. The only provision for notice to the beneficiaries was that publication be made in a local newspaper. The validity of the Act was challenged by a benficiary on the ground that it was insufficient to afford due process. All of the New York Courts upheld the validity of the Act. The Supreme Court of the United States, on April 24, 1950, reversed, saying:

> "We hold the notice of judicial settlement of accounts required by the New York Banking Law, Section 100-c (12) is incompatible with the requirements of the Fourteenth Amendment as a basis for adjudication depriving known persons, whose whereabouts are also known, of substantial property rights."

In support of such holding, the Court called attention to the fact that:

> "In two ways this proceeding does or may deprive beneficiaries of property. It may cut off their rights to have the trustee answer for negligent or illegal impairments of their interests. Also, their interests are presumably subject to diminution in the proceeding by allowance of fees and expenses to one who, in their names but without their knowledge, may conduct a fruitless or uncompensatory contest. Certainly the proceeding is one in which they may be deprived of property rights and hence notice and hearing must measure up to the standards of due process."

As we have heretofore suggested, we think no one would even suggest that royalty owners' rights may not be or were not jeopardized and affected by the order creating the unit. As a matter of fact, we know of no more drastic legislation than that here involved. Of course, we recognize that individual interests must in many instances give way to the public good. However, private property and contractual rights should not be destroyed without the affected parties at least having an opportunity to protect them. Such an opportunity is, under our form of government, ordinarily provided by giving to the affected party "his day in court". The Supreme Court in the Mullane cases recognized, as do we, that oftentimes the interest of the state and that of individuals comes into conflict, and that a construction of the due process clause which would create impossible or impractical obstacles cannot be justified. However, the Court said:

> "Against this interest of the State we must balance the individual interest sought to be protected by the Fourteenth Amendment. This is defined by our holding that 'The fundamental requisite of due process of law is the opportunity to be heard.' Grannis v. Ordean, 234 U. S. 385, 394, 34 S. Ct. 779, 783, 58 L. Ed. 1363. This right to be heard has little reality or

> worth unless one is informed that the matter is pending and can choose for himself whether to appear or default, acquiesce or contest."

Concerning the nature of the notice required under the due process clause, the Supreme Court, in accordance with its prior holdings, reiterated that,

> "An elementary and fundamental requirement of due process in any proceeding which is to be accorded finality is notice reasonably calculated, under all the circumstances, to apprise interested parties of the pendency of the action, and afford them an opportunity to present their objections."

In holding that notice by publication was inadequate, the Court called attention to the fact that the trustee in most instances was aware of the names and addresses of the beneficiaries, and as to them the Court said:

> "As to known present beneficiaries of known place of residence, however, notice by publication stands on a different footing. Exceptions in the name of necessity do not sweep away the rule that within the limits of practicability notice must be such as is reasonably calculated to reach interested parties. Where the names and post office addresses of those affected by a proceeding are at hand, the reasons disappear for resort to means less likely than the mails to apprise them of its pendency."

Similarly, in the instant case, the names and addresses of royalty owners are within the knowledge of the lessees who, under the Act, so completely dominate the proceedings. It is common knowledge that in producing areas lessees who are authorized by lessors to dispose of the production know the names and whereabouts of those who are entitled to participate in the royalty. Consequently, the reasoning of the Supreme Court is clearly applicable here, and the failure of the Act to provide for such notice

deprives it of validity because violative of the due process requirement.

In this connection, for the purpose of emphasis, we call the Court's attention to the fact that the legislation involved completely ignores the rights and interests of the royalty owners. Nowhere in the Act are they accorded any consideration. As a matter of fact, they are only mentioned because under the Act their rights may be decreased. The majority opinion tacitly approves this complete disregard, because it is pointed out, "but they are granted the right of an appeal." We are aware of no case which holds or intimates that the granting of a right of appeal meets the requirement of due process. As a matter of fact, the rule is generally stated that the right of appeal is no part of due process. The reasons for giving a person his day in court certainly dispel any idea that the right to appeal may be substituted therefor. For this reason alone, then, we respectfully submit that the Act involved is fatally defective in that it authorizes the destruction and impairment of property and proper rights without due process of law.

Conclusion

This case has received unusual consideration at the hands of this Court. It has been pending for more than two years. The division of the Justices is sharp and clear. For that reason we have refrained from a detail discussion of the provisions of the Act or its effect upon the parties involved. We recognize that the majority opinion and those registering dissent have been carefully prepared and reflect the considered views of the authors. We do feel, however, that the majority opinion is in conflict with fundamental constitutional concepts, and particularly those relating to the delegation of legislative power and due process. We have attempted to point out such conflict, and respectfully submit that the majority opinion should be withdrawn and one establishing the invalidity of the legislation involved promulgated by this Court.

We therefore respectfully ask the Court for leave to file Second Petition for Rehearing, and believing that the

nature of the litigation is such that its effect is of widespread public interest, we further pray for the opportunity to further orally argue the case before this Court.

Respectfully submitted,

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APPENDIX "D"

HOUSE BILL NO. 339 OF THE 1945 OKLAHOMA LEGISLATURE

UNITIZED MANAGEMENT OF COMMON SOURCES OF SUPPLY (NEW)

Par. 286.1. LEGISLATIVE DECLARATION.--The Legislature finds and determines that it is desirable and necessary, under the circumstances and for the purposes hereinafter set out, to authorize and provide for unitized management, operation and further development of the oil and gas properties to which this Act [1] is applicable, to the end that a greater ultimate recovery of oil and gas may be had therefrom, waste prevented, and the correlative rights of the owners in a fuller and more beneficial enjoyment of the oil and gas rights, protected. Laws 1945, p. 162, Par. 1.

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[1] Sections 286.1-286.17 of this title. Approved April 19, 1945. Effective 90 days after April 26, 1945 date of adjournment.

Par. 286.2. Common Sources of Supply to Which Act Is Applicable.—This Act[1] shall apply only to common sources of supply of oil, oil and gas, or gas distillate in this State.

The provisions of this Act shall not apply to any common source of supply of oil, oil and gas, or gas distillate or any part or parts thereof which at the effective date of this Act are being operated by or under pressure maintenance, repressuring, or secondary recovery methods or operations, provided, that nothing contained in this Act shall prevent the voluntary inclusion and extension of areas in which are located such existing pressure maintenance, repressuring, or secondary recovery methods or operations as unit areas under the provisions of this Act. Provided this Act shall not apply to any field where the discovery well has been drilled twenty (20) years prior to the effective date of this Act. Laws 1945, p. 162, Par. 2.

Par. 286.3. Jurisdiction of Corporation Commission.—Subject to the limitations of this Act[1] the Corporation Commission of the State of Oklahoma, hereinafter referred to as the "Commission", is hereby vested with jurisdiction, power and authority, and it shall be its duty, to supervise the administration of this Act. Laws 1945, p. 163, Par. 3.

Par. 286.4. The Petition for and Order Creating Unit.—If upon the filing of a petition therefor and after notice and hearing, all in the form and manner and in accordance with the procedure and requirements hereinafter provided the Commission shall find (a) that the unitized management, operation and further development of a common source of supply of oil and gas or portion thereof is reasonably necessary in order to effectively carry on pressure maintenance or repressuring operations, cycling operations, water flooding operations, or any combination thereof, or any other form of joint effort calculated to substan-

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[1] Sections 286.1-286.17 of this title.

tially increase the ultimate recovery of oil and gas from the common source of supply; and (b) that one or more of said unitized methods of operation as applied to such common source of supply or portion thereof are feasible, will prevent waste and will with reasonable probability result in the increased recovery of substantially more oil and gas from the common source of supply than would otherwise be recovered; and (c) that the estimated additional cost, if any, of conducting such operations will not exceed the value of the additional oil and gas so recovered; and (d) that such unitization and adoption of one or more of such unitized methods of operation is for the common good and will result in the general advantage of the owners of the oil and gas rights within the common source of supply or portion thereof directly affected, it shall make a finding to that effect and enter an order approving the creation of a unit composed of the lessees and other persons who under the plan of unitization approved by the Commission are chargeable with the responsibility and cost of conducting such unitized methods of operation, development of the common source of supply or portion thereof described in the order, all upon such terms and conditions, as may be shown by the evidence to be fair, reasonable, equitable and which are necessary or proper to protect, safeguard, and adjust the respective rights and obligations of the several persons affected, including royalty owners, owners of overriding royalties, oil and gas payments, carried interests, mortgagees, lien claimants and others, as well as the lessees. To give the Commission jurisdiction hereunder, the petition shall be filed by, or with the authority of, lessees of record of fifty percent (50%) or more of the area of the common source of supply or portion thereof sought to be unitized. The petition shall set forth a description of the proposed unit area with a map or plat thereof attached, must allege the existence of the facts required to be found by the Commission as hereinabove provided and shall have attached thereto a recommended plan of unitization applicable to

such proposed unit area and which the petitioners consider to be fair, reasonable and equitable. Laws 1945, p. 163, Par. 4.

Par. 286.5. UNIT AREA AND PLAN OF UNITIZATION.—The order of the Commission shall define the area of the common source of supply or portion thereof to be included within the unit area and prescribe with reasonable detail the plan of unitization applicable thereto.

Each unit and unit area shall be limited to all or a portion of a single common source of supply. Only so much of a common source of supply as has reasonably been defined by actual drilling operations may be so included within the unit area.

A unit may be created to embrace less than the whole of a common source of supply only where it is shown by the evidence that the area to be so included within the unit area is of such size and shape as may be reasonably required for the successful and efficient conduct of the unitized method or methods of operation for which the unit is created, and that the conduct thereof will have no material adverse effect upon the remainder of such common source of supply.

The plan of unitization for each such unit and unit area shall be one suited to the needs and requirements of the particular unit dependent upon the facts and conditions found to exist with respect thereto. In addition to such other terms, provisions, conditions and requirements found by the Commission to be reasonably necessary or proper to effectuate or accomplish the purpose of this Act, and subject to the further requirements hereof, each such plan of unitization as the parties thereto may agree upon shall be fair, reasonable and equitable, and among other proper and equitable provisions, shall provide:

(a) For the efficient unitized management or control of the further development and operation of the unit area for the recovery of oil and gas from the common source of supply affected. Under such a plan the actual operations within the unit area may be carried on in whole or in part by the several lessees of leases within the unit area, sub-

ject to the supervision and direction of the unit, or may be conducted in whole or in part by the unit or some particular operator or operators of a lease or leases in the approved unit area dependent upon what is most beneficial or expedient. The designation of the operator shall be by vote of the lessees in the unit in a manner provided in the plan of unitization and not by the Commission.

(b) The division of interest or formula for the apportionment and allocation of the unit production, among and to the several separately-owned tracts within the unit area such as will reasonably permit persons otherwise entitled to share in or benefit by the production from such separately-owned tracts to produce or receive, in lieu thereof, their fair, equitable and reasonable share of the unit production or other benefits thereof. A separately-owned tract's fair, equitable, and reasonable share of the unit production shall be measured by the value of each such tract for oil and gas purposes and its contributing value to the unit in relation to like values of other tracts in the unit, taking into account acreage, the quantity of oil and gas recoverable therefrom, location on structure, its probable productivity of oil and gas in the absence of unit operations, the burden of operation to which the tract will or is likely to be subjected, or so many of said factors, or such other pertinent engineering, geological, or operating factors, as may be reasonably susceptible of determination. Unit production as that term is used in this Act shall mean and include all oil and gas produced from a unit area from and after the effective date of the order of the Commission approving the creation of the unit regardless of the well or tract within the unit area from which the same is produced;

(c) The manner in which the unit and the further development and operation of the unit area shall or may be financed and the basis, terms and conditions on which the cost and expense thereof shall be apportioned among and assessed against the tracts and interests made chargeable therewith, including a detailed accounting procedure governing all charges and credits incident to such operations.

Upon and subject to such terms and conditions as to time and rate of interest as may be fair to all concerned, reasonable provisions shall be made in the plan of unitization for carrying or otherwise financing lessees who are unable to meet their financial obligations in connection with the unit.

(d) The procedure and basis upon which wells, equipment and other properties of the several lessees within the unit area are to be taken over and used for unit operations, including the method of arriving at the compensation therefor, or of otherwise proportionately equalizing or adjusting the investment of the several lessees in that project as of the effective date of unit operations.

(e) For the creation of an operating committee to have general over-all management and control of the unit and the conduct of its business and affairs and the operations carried on by it, together with the creation or designation of such other subcommittees, boards or officers to function under authority of the operating committee as may be necessary, proper or convenient in the efficient management of the unit, defining the powers and duties of all such committees, boards or officers and prescribing their tenure and time and method for their selection. Each lessee within the unit area shall be entitled to representation on the operating committee and shall have a vote equal to the proportionate interest of such lessee in the unit, provided, where the voting interest of a lessee is such as to control the action taken by the committee, the vote of such lessee shall not serve to carry or defeat action by the committee unless such vote is supported by the vote of a majority of the remaining lessees.

(f) The time when the plan of unitization shall become and be effective;

(g) The time when and conditions under which and the method by which the unit shall or may be dissolved and its affairs wound up. Laws 1945, p. 164, Par. 5.

Par. 286.6. OBJECTION TO CREATION OF UNIT.—If at any time after the filing of a petition for the creation of a unit and within sixty (60) days after the entry of an order by

the Commission approving the creation of the same, lessees of record of fifteen percent (15%) or more of the proposed unit area, if prior to the entry of the order by the Commission, or lessees of record of fifteen percent (15%) or more of the unit area as defined by the approved plan of unitization and order of the Commission, if after the entry of such order, shall file written protest with the Commission against the creation of the unit, the Commission shall vacate all action of any kind theretofore taken and dismiss the proceedings for the creation of such unit. The fact that a lessee joined in the petition seeking authority to create the unit or otherwise participated in any of the steps thereafter taken with the view of creating the same, shall not preclude such lessee from filing a protest pursuant to the provisions of this Section. Laws 1945, p. 165, Par. 6.

Par. 286.7. PROCEDURE AND APPEAL.—Except as otherwise herein expressly provided, all proceedings had under this Act [1] including the filing of petitions, the giving of notices, the conduct of hearings and other action taken by the Commission shall be in the form and manner and in accordance with the procedure and procedural requirements provided in Sections 84 to 135, inclusive, Title 52, Oklahoma Statutes, 1941, or any amendment thereof with reference to proceedings thereunder. Such additional notice shall be given as may be required by the Commission. The Conservation Officer, his assistant and deputies and the Conservation Attorney shall act without additional compensation as technical advisors to the Commission to the extent that the Commission may require. Any person aggrieved by any order of the Commission made pursuant to this Act may appeal therefrom to the Supreme Court of the State of Oklahoma upon the same conditions, within the same time and in the same manner as is provided in said Sections 84 to 135, inclusive, Title 52, Oklahoma Statutes, 1941, for the taking of appeals from the orders of the Commission made thereunder, except in any such ap-

[1] Sections 286.1-286.17 of this title.

peal the Commission shall be impartial, inactive and shall not be represented directly or indirectly by the Conservation Attorney, the Attorney General or any other public official or person. The Supreme Court on appeal shall have jurisdiction and authority and it shall be its duty to review the record of proceedings and transcript of evidence and to consider the validity of the order of the Commission appealed therefrom. On appeal the order of the Commission appealed from shall be regarded as prima facie valid, fair, reasonable and equitable, but if the order is found to be contrary to the clear weight of the evidence, in any one of such respects, the same shall be vacated and set aside and the cause referred to the Commission for further proceedings not inconsistent with the judgment of the court; otherwise the said order shall be affirmed.

In addition to any other remedy provided in this Act any interested person, firm or corporation within a unit area feeling himself aggrieved by any order of the Commission or the action of a unit thereunder, may at any time institute a suit in the District Court of the County in which the greater part of the unit area is located, as in other civil suits in equity, against the other lessees within the unit and in such suit have his rights and equities determined. Any person aggrieved by the judgment entered in such an action may appeal therefrom to the Supreme Court of the State of Oklahoma in the time and manner as appeals are taken in other civil actions. To the extent possible under existing laws the Supreme Court shall give precedence to all such appeals in the hearing and disposition thereof. Laws 1945, p. 165, Par. 7.

Par. 286.8. OPERATIONS IN VIOLATION OF PLAN OF UNITIZATION UNLAWFUL.—From and after the effective date of an order of the Commission approving the creation of a unit and approving the plan of unitization applicable thereto the drilling of any well into or the operation of any well producing from the common source of supply or portion thereof within the unit area defined in the order by persons other than the unit or persons acting under its authority or except in the manner and to the extent provided in such

plan of unitization shall be unlawful and is hereby prohibited. Laws 1945, p. 166, Par. 8.

Par. 286.9. THE NATURE, PURPOSES AND FUNCTIONS OF UNITS, AND LIABILITY OF OWNERS OF OIL AND GAS RIGHTS THEREIN FOR UNIT EXPENSE.—Each unit created under the provisions of this Act [1] shall be a body politic and corporate, capable of suing, being sued and contracting as such in its own name. Each such unit shall be authorized on behalf and for the account of all the owners of the oil and gas rights within the unit area, without profit to the unit, to supervise, manage and conduct the further development and operations for the production of oil and gas from the unit area, pursuant to the powers conferred, and subject to the limitations imposed by the provisions of this Act and by the plan of unitization.

The obligation or liability of the lessee or other owners of the oil and gas rights in the several separately-owned tracts for the payment of unit expense shall at all times be several and not joint or collective and in no event shall a lessee or other owner of the oil and gas rights in the separately-owned tract be chargeable with, obligated or liable, directly or indirectly, for more than the amount apportioned, assessed or otherwise charged to his interest in such separately-owned tract pursuant to the plan of unitization and then only to the extent of the lien provided for in this Act.

Subject to such reasonable limitations as may be set out in the plan of unitization, the unit shall have a first and prior lien upon the lease-hold interest only in the unitized common source of supply (exclusive of a one-eighth (⅛) royalty interest) in and to each separately-owned tract, the interest of the owners thereof in and to the unit production and all equipment in the possession of the unit, to secure the payment of the amount of the unit expense charged to and assessed against such separately-owned tract. The interest of the lessee or other persons who by lease, contract or otherwise are obligated or responsi-

[1] Sections 286.1-286.17 of this title.

ble for the cost and expense of developing and operating a separately-owned tract for oil and gas in the absence of unitization shall, however, be primarily responsible for and charged with any assessment for unit expense made against such tract and resort may be had to overriding royalties, oil and gas payments, royalty interests in excess of a one-eighth (⅛) of the production, or other interests which otherwise are not chargeable with such cost, only in the event the owner of the interest primarily responsible fails to pay such assessment or the production to the credit thereof is insufficient for that purpose. In the event the owner of any royalty interest, over-riding royalty, oil and gas payment or other interest which under the plan of unitization is not primarily responsible therefor pays in whole or in part the amount of an assessment for unit expense for the purpose of protecting such interest, or the amount of the assessment in whole or in part is deducted from the unit production to the credit of such interest, the owner thereof shall to the extent of such payment or deduction be subrogated to all of the rights of the unit with respect to the interest or interests primarily responsible for such assessment. A one-eighth (⅛) part of the unit production allocated to each separately-owned tract shall in all events be regarded as royalty to be distributed to and among, or the proceeds thereof paid to, the royalty owners free and clear of all unit expense and free of any lien therefor. Laws 1945, p. 166, Par. 9.

Par. 286.10. PROPERTY AND CONTRACT RIGHTS.—Property rights, leases and other contracts, and all rights and obligations shall meet the provisions and requirements of this Act [1] and to any valid and applicable plan of unitization or order of the Commission made and adopted pursuant hereto, but otherwise to remain in full force and effect.

Nothing contained in this Act shall be construed to require a transfer to or vesting in the unit of title to the separately-owned tracts or leases thereon within the unit

[1] Sections 286.1-286.17 of this title.

area, other than the right to use and operate the same to the extent set out in the plan of unitization; nor shall the unit be regarded as owning the unit production. The unit production and the proceeds from the sale thereof shall be owned by the several persons to whom the same is allocated under the plan of unitization. All property, whether real or personal, which the unit may in any way acquire, hold or possess shall not be acquired, held or possessed by the unit for its own account but shall be so acquired, held and possessed by the unit for the account and as agent of the several lessees and shall be the property of such lessees as their interests may appear under the plan of unitization, subject, however, to the right of the unit to the possession, management, use or disposal of the same in the proper conduct of its affairs, and subject to any lien the unit may have thereon to secure the payment of unit expense.

The amount of the unit production allocated to each separately-owned tract within the unit, and only that amount, regardless of the well or wells in the unit area from which it may be produced, and regardless of whether it be more or less than the amount of the production from the well or wells, if any, on any such separately-owned tract, shall for all intents, uses, and purposes be regarded and considered as production from such separately-owned tract, and, except as may be otherwise authorized in this Act, or in the plan of unitization approved by the Commission, shall be distributed among or the proceeds thereof paid to the several persons entitled to share in the production for[2] such separately-owned tract in the same manner, in the same poroportions, and upon the same conditions that they would have participated and shared in the production or proceeds thereof from such separately-owned tract had not said unit been organized, and with the same legal force and effect. If adequate provisions are made for the receipt thereof, the share of the unit production allocated to each separately-owned tract shall be delivered in

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[2] Probably should read "from".

kind to the persons entitled thereto by virtue of ownership of oil and gas rights therein or by purchase from such owners subject to the right of the unit to withhold and sell the same in payment of unit expense pursuant to the plan of unitization, and subject further to the call of the unit on such portions of the gas for operating purposes as may be provided in the plan of unitization.

Operations carried on under and in accordance with the plan of unitization shall be regarded and considered as a fulfillment of and compliance with all of the provisions, covenants, and conditions, express or implied, of the several oil and gas mining leases upon lands included within the unit area, or other contracts pertaining to the development thereof, insofar as said leases or other contracts may relate to the common source of supply or portion thereof included in the unit area. Wells drilled or operated on any part of the unit area no matter where located shall for all purposes be regarded as wells drilled on each separately-owned tract within such unit area. Laws 1945, p. 167, Par. 10.

Par. 286.11. AMENDMENTS TO PLAN OF UNITIZATION.—In any proceeding hereunder in which an order is entered creating a unit, the Commission shall retain jurisdiction thereof and of all parties in interest for the purpose of amending the plan of unitization from time to time whenever by reason of changed conditions or otherwise for good cause shown it is made to appear that such amendment is necessary or proper. Such an amendment may be made only upon the petition of lessees of record of ten percent (10%) or more of the unit area. Any amendment to a plan of unitization made pursuant hereto shall be effective prospectively only from and after the date on which the order providing for such amendment shall become final. The procedure for any such amendment including the filing of a petition, the giving of notice and conduct of the hearing shall be the same as that required for the creation of a unit and the adoption of a plan of unitization in the first instance, insofar as applicable. Laws 1945, p. 168, Par. 11.

Par. 286.12. ENLARGEMENT OF UNITS.—The unit area of

a unit may be unitized with adjoining and contiguous portions of the same common source of supply including the unit area of another or other units, and a unit created for the unitized management, operation and further development of such enlarged unit area upon the filing of a petition therefor and after notice and hearing, in the same manner, on the same conditions, but subject to the right of lessees of record of fifteen percent (15%) or more of an existing unit area to protest, and veto such enlargement or merger, all as herein provided with respect to the creation of a unit in the first instance. Upon the creation of a larger unit embracing the unit area of one or more smaller units, the larger unit so created shall thereupon supersede such smaller unit or units. Laws 1945, p. 169, Par. 12.

Par. 286.13. PUBLIC LANDS.—The Commissioners of the Land Office, or other proper board or officer of the State having the control and management of State land, and the proper board or officer of any political, municipal, or other subdivision or agency of the State, are hereby authorized and shall have the power on behalf of the State or of such political, municipal, or other subdivision or agency thereof, with respect to land or oil and gas rights subject to the control and management of such respective body, board, or officer, to consent to or participate in any plan or program of unitization adopted pursuant to this Act.[1] Laws 1945, p. 169, Par. 13.

Par. 286.14. NO INCOME OR PROFIT SUBJECT TO TAXATION.—Neither the unit production or proceeds from the sale thereof, nor other receipts shall be treated, regarded, or taxed as income or profits of the unit; but instead, all such receipts shall be the income of the several persons to whom or to whose credit the same are payable under the plan of unitization. To the extent the unit may receive or disburse said receipts it shall only do so as a common administrative agent of the persons to whom the same are payable. Laws 1945, p. 169, Par. 14.

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[1] Sections 286.1-286.17 of this title.

Par. 286.15. DEFINITIONS.—For the purposes of this Act,[1] unless the context otherwise requires:

(a) The term "lessee" refers not only to lessees under oil and gas leases but also to the owners of unleased lands or mineral rights having the right to develop the same for oil and gas.

(b) Any reference to a separately-owned tract, although in general terms broad enough to include the surface and all underlying common sources of supply of oil and gas shall have reference thereto only in relation to the common source of supply or portion thereof embraced within the unit area of a particular unit.

(c) The phrase "oil and gas" shall refer not only to oil and gas as such in combination one with the other, but shall have general reference to oil, gas, casinghead gas, casinghead gasoline, gas-distillate, or other hydrocarbons, or any combination or combinations thereof, which may be found in or produced from a common source of supply of oil, oil and gas or gas-distillate.

(d) The term "person" shall mean and include any individual, corporation, partnership, common law or statutory trust, association of any kind, the State of Oklahoma or any subdivision or agency thereof acting in a proprietary capacity, guardian, executor, administrator, fiduciary of any kind, or any other entity or being capable of owning an interest in and to a common source of supply of oil and gas.

(*d*) The term "unit expense" shall include and mean any and all cost, expense, or indebtedness incurred by the unit in the establishment of its organization, or incurred in the conduct and management of its affairs or the operations carried on by it, authorized by the approved plan of unitization. Laws 1945, p. 169, Par. 15.

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[1] Sections 286.1-286.17 of this title.

Par. 286.16. CONSTRUCTION OF ACT.—The provisions of this Act [1] are declared to be severable, and, if any section, sentence, clause or part thereof be held invalid or unconstitutional for any reason, such invalidity or unconstitutionality shall not be construed to affect the validity of the remaining provisions of this Act. Laws 1945, p. 170, Par. 16.

Par. 286.17. UNITIZATION AGREEMENTS NOT VIOLATIVE OF ANTI-TRUST LAWS OR IN RESTRAINT OF TRADE.—No agreement between or among lessees or other owners of oil and gas rights in oil and gas properties, entered into pursuant hereto or with a view or for the purpose of bringing about the unitized development or operation of such properties, shall be held to violate any of the statutes of this State prohibiting monopolies or acts, arrangements, agreements, contracts, combinations or conspiracies in restraint of trade or commerce. Laws 1945, p. 170, Par. 17.

[1] Sections 286.1-286.17 of this title.

APPENDIX "E"

ORDER NO. 20289 OF THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA, INCLUDING ITS FINDINGS OF FACT AND THE WRITTEN PLAN OF UNITIZATION BY SUCH ORDER APPROVED

REPORT AND ORDER PLAN OF UNITIZATION OF WEST CEMENT MEDRANO UNIT

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

Cause CD No. 1308 Order No. 20289

IN THE MATTER OF THE PETITION FOR THE CREATION OF THE WEST CEMENT MEDRANO UNIT HAVING FOR ITS PURPOSE THE UNITIZED MANAGEMENT, OPERATION AND FURTHER DEVELOPMENT OF THE WEST CEMENT MEDRANO COMMON SOURCE OF SUPPLY OF OIL AND GAS IN CADDO COUNTY, OKLAHOMA, THE DEFINING OF THE UNIT AREA THEREOF AND THE PRESCRIBING OF THE PLAN OF UNITIZATION APPLICABLE TO SUCH UNIT AND UNIT AREA

REPORT AND ORDER OF THE COMMISSION

The above styled and numbered cause is a proceeding brought by the lessees of a substantial majority of the acreage in the West Cement Medrano oil and gas pool or field located in Caddo County, Oklahoma, seeking to unitize the management, operation and further development of said field for the purpose of preventing the waste of oil and gas and of substantially increasing the ultimate recovery of oil therefrom, all as authorized and provided for in H. B. 339 of the 1945 Oklahoma Legislature. The bringing of this proceeding followed months of cooperative study

of the field and of the benefits of unitization engaged in by substantially all of the operating lessees in the pool and in which all were invited to participate. The original petition herein, attached to which was a recommended Plan of Unitization applicable to said field, was filed October 23, 1946.

Pursuant to order of the Commission, said petition was first set for hearing November 7, 1946, at 10:00 o'clock, A. M. in the Commission Courtroom in the State Capitol Office Building at Oklahoma City, Oklahoma, and notice thereof published once a week for two consecutive weeks in a newspaper of general circulation in Caddo County, in which West Cement Medrano field is located, and for the same time in a newspaper of general circulation in Oklahoma County, Oklahoma.

At the time and place so fixed for said hearing, a large number of persons were present, not only lessees but also land owners, royalty owners and other persons having varying interests in the West Cement Medrano Field. A group of lessors and royalty owners, represented by their attorney, Reford Bond, Jr., advised the Commission that they had not had sufficient time within which to study the proposed Plan of Unitization and requested a continuance of the hearing. The granting of the continuance was agreed to by the petitioners who, through their attorneys, publicly announced that during the period of the continuance they stood ready and willing, upon request, to furnish any party in interest any factual data pertaining to the West Cement Medrano field and the proposed Plan of Unitization available to petitioners. At the same time Magnolia Petroleum Company, an operating lessee in the field, asked leave to sign the petition as one of the petitioners thereto. Whereupon, the Commission continued said hearing to December 9, 1946, at 10:00 o'clock A. M. at the same place, permitted the Magnolia Petroleum Company to sign the petition as one of the petitioners, directed that the petition be refiled and ordered that notice of the refiling of the petition and of the date to which said hearing was continued be published in the same manner and for the same

time as was the first notice of hearing, all of which was done.

In advance of said original hearing date, as is its usual custom in oil and gas matters, the Commission mailed mimeographed copies of the petition, together with information as to the time of hearing, to all persons on its established mailing list, which includes all operating lessees within the West Cement Medrano field as well as number of royalty and other interest owners.

The hearing of said cause was commenced at the time and place so fixed, namely, December 9, 1946, at 10:00 o'clock A. M., in the Commission Courtroom in the Capitol Office Building in Oklahoma City, Oklahoma, and continued at the same place throughout all the following days, to wit: December 9 and 23, 1946; January 6 and 7; February 25, 26, 27 and 28; May 13, 14, 15, 16, 20, 21, 22 and 23; July 15, 16, 17, 18, 22, 23, 24 and 25; all in 1947, except for said first mentioned dates in 1946. The continuance of said hearing from time to time was by proper orders of continuance. At said hearing the petitioners and subscribers to the proposed Plan of Unitization were represented by the following named attorneys: W. H. Brown, Russell G. Lowe, Booth Kellough, W. R. Wallace and R. M. Williams. The protestant, the Palmer Oil Corporation appeared by its attorneys, Mark H. Adams and Charles Jones, of Wichita, Kansas. Protestants Tom Potter, Clyde Kahle, Maud Kahle, Bob White Oil and Gas Company and a group of approximately 65 lessors and royalty owners appeared by their attorney, Roford Bond, Jr. The protestants B. E. Johnson, Virginia McIntyre and M. L. McIntyre appeared by their attorney, Jack Page. A number of royalty and other interest owners wrote letters to the Commission urging the granting of the petition, all of which appear in the record. Other royalty owners and various parties in interest were present at the hearing from time to time but took no part.

At the hearing everyone who desired to do so, regardless of the interest of such person, was given full opportunity to offer any and all competent evidence that any

such person chose to offer, either for or against the recommended Plan of Unitization or by way of amendment thereto, and to otherwise be heard in regard thereto. The evidence so introduced consisted of extensive geological, engineering and other proof concerning the history, discovery, development, operation and present condition of the West Cement Medrano field and the probable results obtainable both under present competitive methods of operation and through the unitization thereof; proof both pro and con as to the fairness, reasonableness and equitableness of the recommended Plan of Unitization; and proof by protestants with respect to certain amendments which they claim should be made in said Plan.

In addition to the knowledge gained from the evidence introduced at said hearing, the Commission has had, over a period of time, a general knowledge of the West Cement Medrano field and of conditions existing therein gained through the exercise by it of its jurisdiction over such field under the Conservation Laws of the State of Oklahoma, dating from the discovery thereof. As a result of the evidence, statements and arguments introduced and made in the hearing here under consideration, and by reason of its general knowledge of said West Cement Medrano field, as aforesaid, the Commission is of the opinion that it has sufficient knowledge and information upon which to base a proper order in this cause.

In addition to the proceedings and notices aforesaid, further mention is here made of the fact that during the course of said hearing, The Palmer Oil Corporation drilled and completed an additional well on a lease owned by it in the aforesaid field, necessitating a relatively slight change in the percentage of interests of the several separately owned tracts in the field shown in "Exhibit B" attached to the recommended Plan of Unitization, and also necessitating the inclusion of such additional well in "Exhibit D" attached to said Plan of Unitization. Also as a result of the time consumed by the hearing, it was considered desirable by the petitioners and subscribers to the recommended Plan of Unitization to strike from Section

XXVII of said Plan the time limitation therein contained. To accomplish the aforesaid objectives, the petitioners during the course of the hearing asked and without objection were granted leave to amend the petition accordingly. In order to permit persons not present at the hearing an additional opportunity to be heard with respect to said amendment, the Commission set the petition as amended for further hearing on July 29, 1947, at 10:00 o'clock A. M., in the Commission Courtroom in the State Capitol Office Building at Oklahoma City, Oklahoma, and caused notice of the amendment to said petition and of the hearing thereon to be published, ten (10) days prior to said hearing date, in a newspaper of general circulation in Oklahoma County, Oklahoma. At the time and place so named, the further hearing was had in said cause upon the petition as amended, no one appearing, however, in opposition thereto.

Now, on this 5th day of September, 1947, the Commission having previously taken said cause under advisement and having considered the matter in conference and each of the Commissioners being well and fully advised, the Commission makes the following findings of fact, conclusions of law, and enters the following order authorizing and approving the creation of the West Cement Medrano Unit, defining of the Unit Area thereof and prescribing of the Plan of Unitization applicable to such Unit and Unit Area.

Findings of Fact and Conclusions of Law

The Commission finds:

1. That notice of the filing of the original petition, the refiling thereof after being signed by the Magnolia Petroleum Company, the filing of the amendment thereto and the time, place and purpose of the hearings on the petition, both as originally filed and as amended, was given in all respects as by law required, and that the Commission has jurisdiction of the subject matter of said petition and amended petition and of all persons interested therein, and has jurisdiction to make and promulgate the hereinafter prescribed order.

2. That the lands (hereinafter designated and referred to as the "Unit Area") located in Caddo County, Oklahoma and outlined by the hatched line on the map marked "Exhibit A" and attached to the Plan of Unitization attached to and made a part of this order, are underlaid with an oil and gas-bearing formation known as the Medrano sandstone found at a depth ranging from approximately 4500 feet along the North and Northeast side of the Unit Area and an approximate depth of 6241 feet along the South and Southwest side of the Unit Area; that a gas cap exists along the high part of the producing formation from which the primary production is gas, whereas, the primary production from wells drilled lower on the structure is oil; that the average sand or formation thickness in the gas cap area or zone is approximately 65 feet; that the average sand or formation thickness in the oil area or zone is approximately 95 feet; that the said Medrano sandstone underlying said above described lands as aforesaid constitute a single common source of supply of oil and gas, all parts of which are permeably connected so as to permit the migration of oil or gas or both from one portion of said common source of supply to another wherever and whenever pressure differentials are created as a result of the production or operations for the production of oil or gas from said producing formation; that although faults are known to exist in parts of said common source of supply said faults do not prevent substantial migration of oil and gas and of pressures from one part of said common source of supply to another; that said common source of supply of oil and gas has heretofore been designated by the Commission and is generally known as the West Cement Medrano pool.

3. That said common source of supply of oil and gas was first discovered in October, 1936 by the drilling and completion of the Magnolia Petroleum Company's Medrano No. 6 gas well in the SE/4 of the NE/4 of the SW/4 of Section 36, Township 6 North, Range 10 West, Caddo County, Oklahoma; that the presence of oil in said common source of supply of oil and gas was first discovered in March, 1943 by the drilling and completion of the Stephens

Petroleum Company's Pierson No. 1 oil well in the SE/4 of the SW/4 of the SE/4 of Section 35, Township 6 North, Range 9 West, Caddo County, Oklahoma; that at the present time there are 37 oil wells and 19 gas wells producing from said common source of supply of oil and gas.

4. That the outer boundaries of said common source of supply of oil and gas underlying and by this Order included within the aforesaid Unit Area have been reasonably defined by actual drilling operations, both by the drilling of wells within and the drilling of wells outside said Unit Area; that said Unit Area consists of approximately 3700 acres of land.

5. That the lands embraced within the aforesaid Unit Area are divided into a large number of individual tracts of varying size and shape, and owned in severalty by a large number of different individuals, firms and corporations owning varying interests therein, including oil and gas leasehold interests, royalty interests and various and sundry other rights and interests; that the several oil and gas leases covering said lands are owned by not less than 25 different lessees; that the royalty interests under said land are divided among and owned by several hundred royalty owners; that the petitioners in this cause are lessees of record of 73.32% of the area of the common source of supply sought to be unitized; that the subscribers to the recommended Plan of Unitization and other lessees favoring its adoption are lessees of record of approximately 94% of the area of said common source of supply; that the lessees appearing at the hearing and protesting the granting of the petition herein are lessees of approximately 4% of the proposed Unit Area; that the lessees of the remaining percentage of the Unit Area have not appeared for or against the granting of the petition herein.

6. That without the unitization of said West Cement Medrano common source of supply of oil and gas the only method whereby said pool can be feasibly and effectively operated and produced for the recovery of oil and gas therefrom is by and under individual competitive pressure depletion methods of operation, the methods now being used in the pool, that is to say, by treating each separately

owned tract or lease as a separate unit for operating and production purposes and depending on the natural energy in the producing formation to move what oil and gas can be moved thereby out of the formation to the well bore where it can be produced; that the principal natural energy mechanism in said pool is gas in solution with the oil coupled with a gas cap expansion; that under present competitive methods of operation, treating each tract or lease as a separate operating unit, there has been and still continues to be a disproportionate, inequitable and wasteful utilization and dissipation of the gas energy in the pool by certain tracts to the detriment and disadvantage of other tracts and to the injury of the pool as a whole; that by and under the best known competitive pressure depletion methods of operation not more than 25% or approximately 24 million barrels of the 97 million barrels of oil originally in place in the reservoir can be economically recovered, leaving the remaining 75%, or approximately 73 million barrels of oil in the ground unrecovered and unrecoverable except through and by means of unitization of the pool and the adoption of unitized methods of operation therein; that to permit the owners of gas wells and high gas-oil ratio wells to continue to produce such wells will result in robbing the oil wells of gas energy required to produce the oil; that to shut in the gas wells and the high gas-oil ratio wells without permitting the owners thereof to share in the oil and gas production from the oil wells, would deprive the owners of the gas wells of their fair share of the production from the pool; that the value of the recoverable oil exceeds many times the market value of the gas; that the return to the reservoir of the gas produced from the oil to supplement the remaining natural gas energy and retard the decline in reservoir pressure and perhaps the injection at some later date of water low on structure is desirable and necessary to obtain the greatest ultimate recovery of oil from the pool, but which cannot be done in the absence of unitization because of the migratory nature of the injected gas or water and the effect that the injection thereof into the reservoir would have upon properties in the pool other than the

property on which the gas or water is injected and upon the pool as a whole.

7. That by and through the unitization of the proposed Unit Area and the unitized management and operation and further development thereof as a unit, all as set out and provided for in the Plan of Unitization hereto attached, full use can be made of the gas energy in the reservoir to the mutual advantage of all the owners of the said common source of supply of oil and gas, that waste of large volumes of oil and gas can be prevented, gas can and will be returned to the reservoir to supplement the natural reservoir energy, water encroachment, either natural or artificial, on the lower side of the pool can be properly controlled and utilized, substantially more oil, amounting to many millions of barrels, can be recovered from the common source of supply than can otherwise be recovered, a more equitable distribution of the recoverable oil and gas can be had as between the several owners of the pool and the correlative rights of the several owners can be more fully protected.

8. The unitization and unitized management and operation and further development of said common source of supply as a unit is reasonably necessary to effectively carry on the unitized methods of operation described in the proposed Plan of Unitization.

9. That any one or all of the unitized methods of operation described in the attached Plan of Unitization as applied to the common source of supply underlying and included within the Unit Area are feasible, will prevent waste, and will, with reasonable probability, result in the increased recovery of substantially more oil and gas from the common source of supply than would otherwise be recovered; that the estimated additional cost of conducting such operations will not exceed the value of the additional oil and gas so recovered; that such unitization and the adoption of any one or more of such unitized methods of operation is for the common good and will result in the general advantage to the owners of the oil and gas rights in and to the common source of supply thereby affected.

10. That neither said West Cement Medrano common source of supply of oil and gas nor any part or parts thereof were being operated by or under pressure maintenance, repressuring or secondary recovery methods of operation as of the effective date of H. B. 339 of the 1945 Oklahoma Legislature.

11. That the Plan of Unitization attached to this order and which is made a part hereof, is one suited to the needs and requirements of the West Cement Medrano Unit, the creation of which is hereby authorized and approved, taking into account all the facts and conditions found by the Commission to exist in respect thereto; that said Plan of Unitization is fair, reasonable and equitable and contains all the terms, provisions, conditions and requirements reasonably necessary and proper to protect, safeguard and adjust the respective rights and obligations of the several persons affected, including royalty owners, owners of overriding royalty interests, oil and gas payments, carried interests, mortgagees, lien claimants, and others, as well as the lessees and such as will effectuate and accomplish the purposes of H. B. 339 of the 1945 Oklahoma Legislature; that said Plan of Unitization provides for the efficient unitized management and control of the further development and operation of the Unit Area for the recovery of oil and gas from the common source of supply affected; that the division of interests set forth in "Exhibit B" attached to said Plan of Unitization pursuant to which the unit production is to be apportioned and allocated among and to the several separately owned tracts within the Unit Area is fair and equitable and is such as will reasonably permit persons otherwise entitled to share in or benefit by the production from such separately owned tracts to receive, in lieu thereof, their fair, equitable and reasonable share of the unit production or other benefits thereof; that the division of interest assigned to the several separately owned tracts in the Unit Area as set out in said "Exhibit B" to said Plan of Unitization is fair and reasonably representative of the value of said several tracts for oil and gas purposes and the contributing value thereof to the unit in relation to like values of other

tracts in the unit; that the basis used to arrive at said division of interest takes into account the acreage of the several separately owned tracts, the quantity of oil and gas recoverable therefrom, the location thereof on structure, the probable productivity of oil and gas from such tracts in the absence of unitization, the burden of operation to which such tracts will or are likely to be subjected, together with all other pertinent engineering, geological and operating factors as are reasonably susceptible of determination; that the manner in which and the basis, terms and conditions on which the cost and expense of the further development and operation of the Unit Area shall be financed and apportioned among and assessed against the tracts and interests chargeable therewith are fair, reasonable and equitable; that the provisions of the said Plan with respect to taking over and using the wells, equipment and other properties of the several lessees within the Unit Area, including the method of arriving at the compensation therefor and otherwise proportionately equalizing and adjusting the investment of the several lessees in the project as of the effective date of the unit operations are fair, reasonable and equitable; that the provisions of said Plan with respect to the creation of an operating committee and the powers and duties of such committee are fair, reasonable and equitable.

12. That the Plan of Unitization hereto attached in all respects conforms to and complies with the requirements of H. B. 339 of the 1945 Oklahoma Legislature.

13. That the West Cement Medrano pool is a field within the meaning of that term as used in the second paragraph of Section 2 of H. B. 339 of the 1945 Oklahoma Legislature; that the term "field" in ordinary usage has no fixed or definite meaning but is sometimes used to refer to the general area where a number of oil or gas producing formations are found and at other times used to refer to a particular common source of supply or pool; that as used by the Legislature aforesaid, the term was intended to relate to the particular common source of supply or pool sought to be unitized under the Act and not to any general area

which in a broader sense could be termed a field; that in effect said Act throughout relates to and deals only with single common sources of supply of oil and gas.

Order

It is therefore ordered by the Corporation Commission of the State of Oklahoma as follows:

1. That the petition filed herein be and the same is hereby granted.

2. That the creation of the West Cement Medrano Unit as prayed in said petition be and the same is hereby authorized and approved.

3. That the Unit Area of said unit shall extend to and include all of the West Cement Medrano common source of supply of oil and gas outlined by the hatched lines on the map marked "Exhibit A" attached to the Plan of Unitization attached to this order.

4. That the Plan of Unitization hereto attached and which by reference is made a part of this order is hereby approved and shall constitute the Plan of Unitization of and for said West Cement Medrano Unit and the Unit Area of said Unit, all to the same extent and with the same force and effect as if copied herein in its entirety.

5. Nothing herein contained shall be construed as a waiver by the Commission of any of its powers or authority over the West Cement Medrano Unit or the persons comprising said unit, or the development and operation of the Unit Area thereof under the general oil and gas conservation laws of the State of Oklahoma, it being expressly recited that the Commission has and retains continuing jurisdiction over the operations carried on by the unit to the same extent that it would have jurisdiction over any other lessee or person producing oil and gas from the West Cement Medrano pool or field in the absence of unitization.

6. The Unit shall from time to time make such reports to the Commission concerning the operation by it of the Unit Area as may be requested by the Commission.

Done and performed by the Corporation Commission at its office in the Capitol Office Building, Oklahoma City, Oklahoma, this 5th day of September, 1947.

CORPORATION COMMISSION OF OKLAHOMA,
(Signed) REFORD BOND, *Chairman.*
(Signed) RAY O. WEEMS, *Vice-Chairman.*
(Signed) RAY C. JONES, *Commissioner.*

Attest:
(Signed) TOM MCMURRAY, *Secretary.*
(SEAL)

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EXHIBITS

Exhibit "A":	Map of Unit Area
Exhibit "B":	
Part I:	Percentage of Interest in Unit
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Exhibit "C":	Accounting Procedure
Exhibit "D":	Table of Well Values

PLAN OF UNITIZATION OF WEST CEMENT MEDRANO UNIT

Know all men by these presents:

The following shall constitute the Plan of Unitization applicable to the West Cement Medrano Unit created pursuant to authority of House Bill 339 of the 1945 Legislature of the State of Oklahoma and having for its purpose the unitized management, operation and further development of the Medrano Sand common source of supply of Oil and Gas underlying the lands outlined by the hatched line on the map hereto attached and marked "Exhibit A", all to the end that a greater ultimate recovery of Oil and Gas may be had therefrom, waste prevented and the correlative rights of the respective owners protected.

I

Definitions

As used in this Plan of Unitization, the following terms and expressions are defined as follows:

(a) "Unit" shall mean the West Cement Medrano Unit.

(b) "Commission" shall mean the Corporation Commission of the State of Oklahoma.

(c) "Person" shall mean any individual, corporation, partnership, common law or statutory trust, association of any kind, the State of Oklahoma or any subdivision or agency thereof acting in a proprietary capacity, guardian, executor, administrator, fiduciary of any kind or any other entity capable of holding an interest in and to the Unit Area.

(d) The pronoun "it" is used to refer to any person regardless of gender.

(e) "Unit Production" shall mean and include all Oil and Gas produced from the Unit Area from and after the Effective Date hereof regardless of the well or tract within the Unit Area from which the same is produced.

(f) "Lessee" shall mean any owner, in whole or in part, of an Oil and Gas Lease or any unleased mineral interest,

who alone or in association with another person or persons has the right, except for this Plan of Unitization, to explore, develop and operate a Separately Owned Tract for Oil and Gas and in so doing would be personally chargeable with a proportionate part of the cost and expense of the operation thereof. An owner of an overriding royalty interest, oil payment, carried interest, net profit contract, or other oil and gas rights of a similar nature, who is not personally chargeable with the cost and expense of operations, shall not be regarded as a Lessee.

(g) "Unit Operator" shall mean and refer to the Lessee designated to carry on and conduct the Unitized Operations within the Unit Area as provided in Section X hereof.

(h) "Oil and Gas" shall not only refer to oil and gas as such in combination one with the other, but shall have reference to oil, gas, casinghead gas, casinghead gasoline or other hydrocarbons, or any combination or combinations thereof, or any one thereof, which may be found in or produced from the Unit Area.

(i) "Oil and Gas Rights" shall mean and include the right to explore, develop and operate lands within the Unit Area for the production of Oil and Gas, to reduce the same to possession or to share in the production so obtained or the proceeds thereof.

(j) "Effective Date" shall mean the date on which the Unit assumes and takes over the operation of the Unit Area as is provided in Section IX hereof.

(k) "Unit Expense" shall include any and all cost, expense or indebtedness incurred by the Unit or Unit Operator as authorized by this Plan of Unitization or the order of the Commission creating the Unit.

(l) "Unqualified Subscribers" shall mean and refer to those Lessees who sign this Plan of Unitization as Unqualified Subscribers as is provided for in Section XXVII hereof.

(m) "Qualified Subscribers" shall mean and refer to those Lessees who sign this Plan of Unitization as Quali-

fied Subscribers as is provided for in Section XXVII hereof.

II

Name

The name of the Unit created hereby shall be West Cement Medrano Unit.

III

Unit Area

The Unit Area of the Unit shall extend to and include all of the Medrano Sand formation underlying the lands outlined by the hatched line on the map hereto attached, marked "Exhibit A" and made a part hereof, the same being a single common source of supply of Oil and Gas, located in Caddo County, Oklahoma.

IV

Separately Owned Tracts

Each tract of land within the Unit Area, which by virtue of the ownership thereof in fee, or by common ownership of the Oil and Gas Rights therein or by lease or other agreement among the owners thereof, is presently regarded as a single tract or leasehold estate for the purpose of Oil and Gas development and operation shall be defined, regarded and treated as a Separately Owned Tract within the purview and meaning of this Plan of Unitization. The Separately Owned Tracts as so defined and established are shown on the map hereto attached and marked "Exhibit A" and are for convenient identification numbered thereon and may be referred to by number.

V

General Powers of Unit

The Unit is authorized and empowered on behalf and for the account of all the Lessees within the Unit Area, without profit to the Unit, to supervise, manage and conduct the further development and operation of the Unit

Area for the production of Oil and Gas, pursuant to the powers conferred and subject to the limitations imposed by the provisions of House Bill 339 of the 1945 Session of the Oklahoma Legislature and by this Plan of Unitization.

VI

Effect of Unitization

The adoption of this Plan of Unitization and the creation of the Unit as herein provided shall have the effect from and after the Effective Date hereof of unitizing all further development and operations for the production of Oil and Gas from the Unit Area and of pooling and unitizing the production so obtained, all to the same extent as if the Unit Area had been included in a single lease and all rights thereunder owned by the Lessees in undivided interests. Property rights, leases, contracts and all other rights and obligations in respect of the Oil and Gas Rights in and to the several Separately Owned Tracts within the Unit Area are hereby amended and modified to the extent necessary to make the same conform to the provisions and requirements of this Plan of Unitization, but otherwise to remain in full force and effect.

The relationship between the Lessees within the Unit Area, resulting from the creation of the Unit shall not be that of a trust, partnership or association but shall be in the nature of the tenancy in common.

Nothing herein contained shall be construed to require or result in a transfer to or the vesting in the Unit of title to the Separately Owned Tracts within the Unit Area or to the leases thereon, other than the right to use and operate the same to the extent set out in this Plan of Unitization; nor shall the Unit be regarded as owning any of the Unit Production. The Unit Production and the proceeds from the sale thereof shall be owned by the several persons to whom the same is allocated under this Plan of Unitization. All property, real or personal, acquired, held or possessed for use in the operation of the Unit Area shall be the property of the Lessees as their interests may ap-

pear under this Plan of Unitization, subject, however, to the rights and powers herein granted the Unit and the Unit Operator.

The amount of the Unit Production allocated to each Separately Owned Tract and only that amount, regardless of the well or wells in the Unit Area from which it may be produced, and regardless of whether it be more or less than the amount of the production from the well or wells, if any, on any such Separately Owned Tract shall, for all intents, uses and purposes, be regarded and considered as production from such Separately Owned Tract.

Operations carried on, under and in accordance with this Plan of Unitization shall be regarded and considered as a fulfillment of and compliance with all the provisions, covenants and conditions, express or implied, of the several oil and gas mining leases upon lands included within the Unit Area, or other contracts pertaining to the development thereof, to the same extent that the development and operation of and the production of Oil and Gas from each of the several Separately Owned Tracts within the Unit Area would have constituted a fulfillment of and compliance with such leases and contracts. Wells drilled or operated on any part of the Unit Area, no matter where located, shall for all purposes be regarded as wells drilled on each Separately Owned Tract within the Unit Area.

VII

Allocation of Unit Production

All Unit Production, except so much thereof as is used in the development and operation of the Unit Area, including repressuring, pressure maintenance and other operations carried on in accordance with this Plan of Unitization, or is unavoidably lost, shall be apportioned among and allocated to the several Separately Owned Tracts within the Unit Area in accordance with the percentage and division of interest set forth and shown in Part I of "Exhibit B" hereto attached, subject, however, to the further provisions of Part II of said Exhibit.

Except as may be otherwise authorized or provided in this Plan of Unitization, the Unit Production allocated to each Separately Owned Tract shall be distributed among or the proceeds thereof paid to the several persons entitled to share in the production from such Separately Owned Tract in the same manner, in the same proportions, and upon the same conditions that they would have participated and shared in the production from such Separately Owned Tract, or the proceeds thereof, had not the Unit been organized, and with the same legal force and effect.

Except as may be otherwise authorized or provided in this Plan of Unitization, and provided adequate provisions are made for the receipt thereof, the share of the Unit Production allocated to each Separately Owned Tract shall be delivered in kind to the persons entitled thereto by virtue of ownership of Oil and Gas Rights therein or by purchase from such owners, subject, however, to the right of the Unit Operator to withhold and sell the same in payment of Unit Expense pursuant to this Plan of Unitization, and subject further to the right of the Unit Operator to take and use such portion of the Unit Production (including residue gas) as may be required for operating purposes, including repressuring, pressure maintenance and any other operation carried on, pursuant to this Plan of Unitization. Persons so entitled to take and receive in kind any portion of the Unit Production shall have the right to construct, maintain and operate within the Unit Area all necessary facilities for that purpose, provided the same are so constructed, maintained and operated as not to interfere with the operations carried on pursuant hereto.

To the extent that any person entitled to take and receive in kind any portion of the Unit Production shall fail to take and receive the same currently as and when produced, the Unit Operator, as agent and for the account and at the expense of such person, is authorized to market and sell or itself purchase, at not less than the market price prevailing at the time of such sale or purchase, the portion of Unit Production not so taken in kind by the person entitled to take and receive the same. Proceeds of the Unit Pro-

duction so sold, or purchased by the Unit Operator, shall be paid by the Unit Operator to the person or persons for whose account the same is so marketed.

The person or persons receiving in kind the Unit Production allocated to any Separately Owned Tract or receiving the proceeds of such Unit Production, if the same is marketed and sold, or purchased by the Unit Operator, shall be responsible for the payment of, and shall indemnify the Unit, the other Lessees and the Unit Operator against any liability for, any and all royalties, overriding royalties, production payments, gross production taxes and any and all other payments and taxes chargeable against or payable out of the Unit Production which is received in kind by, or the proceeds of which are paid to, such person or persons, and neither the Unit nor the Unit Operator shall have any responsibility or liability for payment of such royalties, overriding royalties, production payments, gross production taxes or the other payments or taxes.

If at any time the title or right of any person claiming the right to receive in kind all or any portion of the Unit Production allocated to a Separately Owned Tract is in dispute or is disapproved by the Operating Committee, the Unit Operator shall at the direction of the Operating Committee either (a) withhold and market, or itself purchase the portion of the Unit Production, title to which is in dispute or is disapproved, and impound the proceeds thereof until such time as the title or right thereto is established, by final judgment of a court of competent jurisdiction or otherwise to the satisfaction of the Unit Operator, whereupon, the proceeds so impounded shall be paid, without interest, to the person or persons rightfully entitled thereto, or (b) may require that the person or persons to whom such Unit Production is delivered, or to whom the proceeds thereof are paid, furnish security for the proper accounting therefor to the rightful owner or owners in the event the title or right of such person or persons shall fail, in whole or in part.

The Unit Operator shall have the right to take and utilize so much of the Unit Production as may be neces-

sary or desirable in the development and operation of the Unit Area, including but without being limited to, the use of gas (including residue gas) for repressuring, pressure maintenance or other operations carried on in accordance with this Plan of Unitization. No royalties, overriding royalties, production payments or other payments shall be payable upon or with respect to that portion of the Unit Production so taken and utilized by the Unit Operator or which may be lost in handling or otherwise without want of due diligence on the part of the Unit Operator.

VIII

Operating Committee

An Operating Committee is hereby created to consist of one representative to be designated by each Lessee within the Unit Area, provided that an individual Lessee may himself be a member of the Committee. Such designation shall be in writing and with respect to the representative to participate at the organization meeting of the Committee shall be presented at such meeting, or if thereafter made, shall be filed with the Secretary of the Operating Committee. Any such Lessee may in like manner (a) designate an alternate representative on the Operating Committee, who, in the absence of the Lessee or its regular representative, shall have the same full right and power to represent the interest of such Lessee, or (b) may from time to time discharge any such regular or alternate representative and designate a new representative to act for such Lessee on the Operating Committee.

The Operating Committee shall have the general overall management and control of the Unit and the conduct of its business and affairs and the operations carried on by it, and is authorized and empowered, subject to the terms and provisions hereof, to do all things necessary, proper and convenient for carrying out the terms and spirit of this Plan of Unitization and to that end, not excluding or limiting any other power or powers that may be necessary or

proper for that purpose, shall have the following specific powers and duties:

(a) To adopt rules and regulations for the proper functioning of the Operating Committee, including such matters as the time and places of holding meetings, the calling thereof or the manner of taking the vote on any question all in a manner not inconsistent with the express requirements of this Plan of Unitization.

(b) To remove any Unit Operator.

(c) To select a successor to any Unit Operator.

(d) To determine the extent of drilling operations and development to be carried on by the Unit Operator, including the approval or disapproval of the contemplated drilling, deepening, plugging back, reconditioning, abandonment or the use to be made of any well or wells.

(e) To pass upon and approve or disapprove all costs and estimates of costs and any proposed expenditure by the Unit Operator; provided, that the Committee may permit without prior approval by it the incurring of normal operating expense and any proposed expenditure by the Unit Operator of not more than Five Thousand ($5,000.00) Dollars; and provided further that the approval by the Operating Committee of the drilling of any well or wells or carrying out any specific project of development or operation shall mean and include the approval of all necessary expenditures in drilling, completing and equipping such well or wells or carrying out such project.

(f) To determine from time to time the rate at which and the wells from which the Unit Production shall be produced in conformity with good engineering practices and any applicable conservation laws or regulations.

(g) To pass upon, approve or disapprove the purchase, sale or other disposal of materials and equipment by the Unit Operator otherwise than in the normal course of approved operations.

(h) To approve and authorize the purchase, construction, location, abandonment, sale or other disposal of any

compressor plant, gasoline plant, tank batteries, salt water disposal system or other facilities serving the Unit Area.

(i) To determine the manner in which, the location at which and the extent to which gas can best and should be injected into the reservoir to accomplish the Plan of Operation set forth in Section XV hereof.

(j) To provide for the proper auditing of the accounts of the Unit Operator with respect to the operation and development of the Unit Area.

(k) To appoint such sub-committees as it may deem proper and requisite, as for example, an advisory committee, legal committee, engineering committee, plant committee, geological committee and tax committee to act under the authority and subject to the control of the Operating Committee consonant with the terms of this Plan of Unitization.

(l) To approve or disapprove any proposed plan of development or operation or amendment thereof required to be submitted to any regulatory body having jurisdiction of the subject matter thereof.

(m) To approve or disapprove any proposed expenditures for expert technical advice, including any extra services rendered by the Unit Operator's technical staff, not contemplated by the provisions of the accounting procedure hereto attached, marked "Exhibit C" and not covered by the overhead charges therein authorized, which overhead charges in said accounting procedure are intended to cover only normal lease development and lease operations.

(n) To direct and consult with the Unit Operator in all matters pertaining to the duties and functions of the Unit Operator.

(o) To provide for the finances in the manner herein provided for the carrying on of the Unit Operations hereunder.

Each Lessee within the Unit Area who is represented on the Operating Committee shall have a vote equal to the proportionate interest of said Lessee in the Unit determined as follows:

(a) In respect of each Separately Owned Tract, the Lessee or Lessees thereof shall have a vote equal to the percentage indicated opposite such Separately Owned Tract in Part I of "Exhibit B" hereto attached.

(b) Should there be more than one Lessee of a Separately Owned Tract, the vote in respect thereof shall be divided between such Lessees in proportion as such Lessees share in the Unit Expense chargeable to such tract.

(c) The vote of a Lessee having an interest in more than one Separately Owned Tract shall be the sum total of the votes of such Lessee in respect of all such tracts.

In all matters except the removal of a Unit Operator the vote on behalf of Lessees having at least 66⅔% of the total voting interest in the Unit shall control.

A Unit Operator may be removed only by the vote of at least 75% in interest of the Lessees other than such Unit Operator.

If at any time the voting interest of a Lessee should be such as to control the action taken by the Committee, the vote of such Lessee shall not serve to carry or defeat action taken by the Committee unless such vote is supported by the vote of a majority in interest of the remaining Lessees.

Minutes shall be made of all meetings of the Operating Committee and kept as a part of the permanent records of the Unit. Such minutes need not be a verbatim record of all the proceedings, but shall show and reflect (a) the names of all members present at the meeting; (b) all motions and resolutions offered or acted upon, together with the result of such action; and (c) such other formal action as may be taken by the Committee. A copy of the minutes of each such meeting shall be mailed to each member of the Committee within a reasonable time after the meeting.

Notices or other communications addressed and sent to the Unit or to the Operating Committee by United States mail or telegraph in care of the Unit Operator shall be deemed to have been properly given to or served upon the Operating Committee. The Unit Operator shall

promptly deliver all such notices or communications to the Chairman or Secretary of the Operating Committee.

IX

Organization of Unit and Effective Date of Plan

Subject to call by Lessees of record owning 50% or more in interest in and to the Unit as shown in Part I of "Exhibit B" hereto attached the representatives designated by the several Lessees to serve on the Operating Committee shall meet at some convenient place to perfect the organization of the Operating Committee. Such meeting may be held at any time after twenty (20) days from the date of the order of the Commission approving this Plan of Unitization. Notice of the time and place of said meeting shall be mailed at least ten (10) days prior thereto to all Lessees within the Unit Area whose names and addresses are known to the Lessees calling said meeting, as well as those Lessees who shall have within ten (10) days from the date of said order notified the Secretary of the Commission in writing of their desire to be so notified of the meeting. Any Lessee within the Unit Area desiring notice of such meeting may file a statement of such desire with the Secretary of the Commission, giving its name and the address to which it desires the notice to be sent.

The Operating Committee shall organize by selecting a Chairman, a Vice-Chairman, a Secretary and such other officers as to the Committee may seem proper. The Chairman and Vice-Chairman shall be selected from among the members of the Operating Committee. The Secretary and other officers may or may not be members of the Committee. The Chairman shall preside at all meetings of the Operating Committee when he is present and shall be the Chief Executive Officer of the Unit. The Vice-Chairman shall perform all duties of the Chairman in the absence of the Chairman. The Secretary shall keep and maintain all the records of the Committee and shall also be Secretary of the Unit. Such officers shall serve at the will of the Operating Committee and perform such other

duties as are delegated to them by the Operating Committee.

Upon completion of its organization, the Operating Committee shall proceed to make plans and preparations and take such steps as are necessary for the taking over of the unitized operations and further development of the Unit Area by the Unit, and shall in advance thereof fix the time when the Unit will take over such operation and development, and give the Lessees within the Unit Area reasonable notice thereof. *The time so fixed shall not be less than sixty-one (61) days after the entry of the order of the Commission approving this Plan of Unitization nor more than three months after the time when said order shall have become final.*

The time when the Unit takes over the operation and further development of the Unit Area shall be the Effective Date of this Plan of Unitization.

In the event the Unit shall fail to assume and take over the operation of the Unit Area on or before three (3) months after the time when the order of the Commission approving this Plan of Unitization shall have become final, then and in that event the Unit shall, without further action on the part of the Operating Committee or the Commission, be dissolved and all rights and obligations under this Plan of Unitization shall be at an end, except that any and all cost and expense incurred by the Unit incident to its organization or preparatory to the taking over of the operation of the Unit Area shall be borne and paid for by the Lessees whose representatives on the Operating Committee by their vote authorized the incurring of such expense, in proportion as the interest of each such Lessee in and to the Unit as set out in Part I of "Exhibit B" bears to the total interest of all such Lessees in and to the Unit as shown on said Part I of "Exhibit B." In the event the Unit assumes and takes over the operation of the Unit Area within the time so named, this Plan of Unitization shall thereafter remain in force and effect until such time as the Unit is dissolved and abandoned as provided in Section XXV hereof.

The order of the Commission approving this Plan of Unitization shall be regarded as having become final at the end of the time allowed by law for any appeal therefrom, if no appeal is taken, or, if an appeal is taken, then upon the final determination of any such appeal.

The Unit on or before five (5) days after the Effective Date hereof shall submit to the County Clerk of Caddo County, Oklahoma, for filing, a written declaration signed by the Chairman and Secretary of the Operating Committee, setting forth

(a) The hour, day and year on which the Unit took over the operation of the Unit Area;

(b) A description or plat of the lands included within the Unit Area; and

(c) The cause number and date of the Commission order approving this Plan of Unitization, with an appropriate reference to such order and the files of the Commission for further information concerning this Plan of Unitization.

X

Unit Operator

Subject to the further provisions of this Plan of Unitization, operations in connection with the development and the operation of the Unit Area for Oil and Gas shall be carried on and conducted by a Unit Operator in accordance with the instructions of the Operating Committee.

The Unit Operator shall:

(a) Conduct all such operations in a good and workmanlike manner.

(b) Keep full, true and correct books, accounts and records of its operations hereunder which shall be made available for inspection at all reasonable times by any of the Lessees within the Unit Area.

(c) Mail to each Lessee on or before the 10th day of each calendar month a full, true and correct statement of all Unit Production during the preceding calendar month.

(d) Comply, to the extent of its operations within the Unit Area, with the Workmen's Compensation Laws of

the State of Oklahoma and with all other valid and applicable federal and state laws and regulations.

(e) Carry such insurance as may be required by the Operating Committee.

(f) Keep the land and leases within the Unit Area free from liens and encumbrances occasioned by the operations of the Unit Operator save only the lien granted the Unit and the Unit Operator under this Plan of Unitization.

The Operating Committee may by the vote hereinbefore provided remove a Unit Operator at any time. A Unit Operator may resign only after giving the Operating Committee six months' written notice of its intention to resign, or sooner if a successor is selected and has assumed the duties of Unit Operator prior to the end of such time. Upon the removal or resignation of a Unit Operator the Operating Committee shall designate a successor Unit Operator from among the Lessees within the Unit Area.

Phillips Petroleum Company is hereby designated as Unit Operator.

XI

Unit Expense

The Unit Operator in the first instance shall pay and discharge all cost and expense incurred in the development and operation of the Unit Area and in the conduct of the activities and affairs of the Unit. All such cost and expense incurred in the development and operation of the Unit Area shall be in accordance with the Accounting Procedure hereto attached, marked "Exhiibt C" and made a part hereof. All other costs and expense shall be only such sums as are approved by the Operating Committee.

All such Unit Expense as it accrues shall be charged to the several Separately Owned Tracts in the Unit Area in proportion to the percentage of interest of such tracts in and to the Unit as set forth and shown in Part I of "Exhibit B" hereto attached.

Except as may be otherwise hereinafter specifically provided, a Lessee or Lessees obligated or responsible for the

cost and expenses of operating a Separately Owned Tract for Oil and Gas in the absence of unitization shall, in the same proportion and to the same extent, be chargeable with and responsible for the payment of the Unit Expense charged against such Separately Owned Tract.

The Unit Operator shall on or before the last day of each calendar month render to each Lessee within the Unit Area an itemized statement of all charges and credits during the preceding month and of the amount due from or to each such Lessee with respect to each Separately Owned Tract. If the Unit Operator so elects, such statement of account may also include a charge by way of an advance of the proportionate part of the estimated Unit Expense for the ensuing month chargeable to the Lessee against whom such statement is rendered, using as a basis therefor the budget hereinafter provided for. Except as may be otherwise provided herein, each Lessee chargeable with the payment thereof shall, within fifteen (15) days from the receipt of such statement, pay to the Unit Operator the amount thereof. If not paid when due, the unpaid balance shall bear interest at the rate of 6% per annum until paid. Payment of any such statement shall not prejudice the right of any Lessee to protest or question the correctness thereof; provided, the Unit Operator shall not be required to adjust any item of charge or credit unless a claim therefor has been presented in writing within six (6) months after the approval by the Operating Committee of the annual audit for the period in which the charge or credit was made.

Before or as soon as practical after the Effective Date hereof, the Operating Committee, acting in conjunction with the Unit Operator, shall prepare a budget of estimated Unit Expense for the remainder of the calendar year and on or before the first day of each December thereafter shall prepare a budget of estimated Unit Expense for the ensuing calendar year, which budgets shall set forth the estimated Unit Expense by quarterly periods. Unless otherwise specified in the budget, it shall be presumed for the purpose of advance billings as aforesaid, that the

estimated Unit Expense for each month of a quarterly period shall be one-third (⅓) of the estimate for the quarterly period. Budgets so prepared shall be estimates only and shall be subject to adjustment and correction by the Operating Committee and Unit Operator from time to time whenever it shall appear that an adjustment or correction is proper. A copy of each such budget and adjusted budget shall be promptly furnished each Lessee within the Unit Area.

Any Lessee, other than an Unqualified Subscriber, who does not elect to pay its proportionate share of the Unit Expense, shall not be personally obligated for the payment thereof, but the amount thereof or such portion thereof as such Lessee shall elect not to pay, together with interest thereon at the rate of 6% per annum, shall be carried and shall be payable, so far as such Lessee is concerned, as follows:

(a) So much of said charge as is made up of current operating costs, as distinguished from items of investment, together with interest thereon, shall be payable out of proceeds from all Unit Production to the credit of the interest or interests chargeable therewith.

(b) So much of said charge as is made up of items of investment, together with interest thereon, shall be payable out of 50% of the net proceeds of the Unit Production to the credit of the interest or interests chargeable therewith after deducting the charge for Operating costs under subparagraph (a) last above.

(c) All credits to any such Lessee on account of the sale or other disposal of surplus material or equipment or otherwise shall be applied against any such unpaid Unit Expense charged against such Lessee.

Amounts so carried as aforesaid, shall be billed to and paid by the Lessees who sign this Plan of Unitization as Unqualified Subscribers, in the proportion that the interest of each in the Unit bears to the total interests in the Unit of all of the Unqualified Subscribers to this Plan of Unitization; Lessees so paying the same shall be reimbursed therefor, together with interest thereon, as and

when the amounts so carried and the interest thereon are collected from the Lessees or interests primarily chargeable therewith.

The Unit shall have a first and prior lien upon the leasehold interest (exclusive of a 1/8 royalty interest) in and to each Separately Owned Tract, the interest of the owners thereof in and to the Unit Production and all equipment in possession of the Unit, to secure the payment of the Unit Expense and other items of cost charged to and against such Separately Owned Tract, provided such lien may be enforced as against overriding royalty, oil and gas payments, royalty interests in excess of a 1/8 of the production, or other interests which otherwise are not chargeable with such costs, only in the event the owner of the interest or interests primarily responsible fails to pay such Unit Expense when due, and the production to the credit thereof is insufficient for that purpose. In the event the owner of any royalty interest, overriding royalty, oil and gas payment or other interest which under the Plan of Unitization is not primarily responsible therefor pays any part of such Unit Expense for the purpose of protecting such interest or the amount of such Unit Expense in whole or in part is deducted from the Unit Production to the credit of such interest, the owner thereof shall, to the extent of such payment or deduction, be subrogated to all of the rights of the Unit and of the Unit Operator with respect to the interest or interests primarily chargeable with such Unit Expense. A one-eighth (1/8) part of the Unit Production allocated to each Separately Owned Tract shall in all events be regarded as royalty to be distributed to and among or the proceeds thereof paid to the royalty owners free and clear of all Unit Expense and free of any lien therefor. The lien hereinabove provided for shall be for the use, benefit and protection of Unit Operator or other Lessees or persons entitled to receive or share in the monies, the payment of which is secured thereby, and in the event of failure of the Unit to enforce such lien, the Unit Operator or other person entitled to the benefit there-

of, shall be subrogated to the lien rights of the Unit, including the right of foreclosure.

In the event of a failure of any Lessee to pay its share of the Unit Expense when due, and also in the case of a Lessee who elects to be carried as aforesaid, the Unit Operator shall be entitled to take and market, or itself purchase the Unit Production to the credit of such Lessee or to the credit of the interest or interests chargeable with such Unit Expense, or to otherwise collect and receive the proceeds from the sale thereof, and shall apply all such sums so collected against the delinquent or unpaid Unit Expense due from such Lessee or interest, the balance of such proceeds, if any, to be paid to the Lessee or other person entitled thereto. The Unit Operator may likewise take any other credit due any such Lessee or interest and apply the same against sums due from such Lessee or interest for Unit Expense.

Any and all income and credits received by Unit Operator on account of Unit Operations hereunder, from whatever source received, shall currently be accounted for and credited to the Lessees or interests entitled to credit therefor.

XII

Initial Adjustment of Investment

Upon the Effective Date hereof the Unit shall assume control and management of the further development and operation of the Unit Area and, except as may be otherwise herein provided, each Lessee within the Unit Area shall deliver possession to the Unit Operator of (a) all wells within the Unit Area, (b) all lease and other operating equipment used in the operation of such wells, and (c) all production and well records and other pertinent data pertaining thereto.

(1) Completed Wells

All wells which as of the Effective Date are completed as producing wells in the Medrano Sand shall be taken over by the Unit, except that in the case of wells deter-

mined by the Operating Committee to be unnecessary to Unit operations, the owners thereof may upon request retain possession thereof for the purpose of completing the same in some other formation not a part of the Unit Area, provided, the owners thereof shall immediately cause the Medrano Sand to be sealed off in a manner satisfactory to the Operating Committee.

(2) Wells Being Drilled or Reconditioned

Any well being drilled, repaired, deepened or plugged back to the Medrano Sand as of the Effective Date hereof may be completed by the separate owner or owners thereof and if so completed as a producing well in the Medrano Sand, shall be taken over by the Unit except that in the case of wells determined by the Operating Committee to be unnecessary to Unit Operation, the possession thereof may be retained by the owners thereof under the circumstances and upon the conditions named in (1) last above.

(3) Casing, Tubing and Wellhead Connections

All casing, one string of tubing and wellhead connections in or on wells taken over by the Unit shall be treated and regarded as a part of such wells.

(4) Lease and Operating Equipment

As of the Effective Date hereof the Operating Committee shall determine what part of the lease and other operating equipment (exclusive of warehouses, lease houses, camps and office buildings) used in the operation of wells taken over by the Unit it considers necessary or desirable to take over and use in connection with the unitized development and operation of the Unit Area including, by way of example, but not thereby excluding, other equipment of a like or different kind, derricks, tank batteries, separators, rods, pumps, tubing in excess of one string, flow lines, water lines, gas lines, etc., which said lease and operating equipment (exclusive of warehouses, lease houses, camps and office buildings) shall be delivered to and taken over by the Unit. All lease and operating

equipment not so taken over shall remain the separate property of the several owners thereof and may be used by said separate owners in the operation of wells producing from formations other than the Medrano Sand or reclaimed as such separate owners may desire. The acquisition of existing warehouses, lease houses, camps, or office buildings considered desirable to the operation and development of the Unit Area shall be by negotiation and separate contract of purchase with the owner or owners of such warehouses, lease houses, camps and office buildings.

(5) Adjustment of Well Investment

(a) Each Separately Owned Tract on which is one or more wells taken over by the Unit shall be given credit for the value assigned to such well or wells as follows: wells listed in "Exhibit D" hereto attached shall have the assigned value therein shown; wells not listed in "Exhibit D" shall be assigned a value determined in the same manner as was used in determining the values assigned to the wells listed in "Exhibit D".

(b) Each Separately Owned Tract within the Unit Area shall thereupon be charged with the total value of all such wells in proportion to such tract's percentage of interest in and to the Unit as shown in Part I of "Exhibit B" hereto attached, less the amount of the credit due such tract under (a) last above, resulting in either a net debit or a net credit with respect to each Separately Owned Tract.

(c) The amount of any net debit chargeable against a Separately Owned Tract under (b) above shall be payable by the Lessee or Lessees of such tract out of 10% of 7/8 of the Unit Production of oil allocated to such tract if such tract has a credit under (a) above, or 25% of 7/8 of said oil if said tract has no credit under (a) above. The oil applicable to the oil payment with respect to each Separately Owned Tract having a net debit shall be sold by the Unit Operator, at not less than the prevailing market price, for the account of the Lessees of Separately Owned Tracts having net credits under (b) above until such time

as the accumulated proceeds thereof equal the amount of such net debit. The Lessee or Lessees of each Separately Owned Tract having a net debit shall have the right to designate the purchaser to whom said oil shall be sold, provided the purchaser so designated will take and purchase said oil at the prevailing market price. Amounts collected by the Unit Operator under the provisions of this paragraph shall be paid by said Unit Operator to the Lessees of Separately Owned Tracts having net credits under (b) above in proportion to the percentages which the net credit due each bears to the net credit due all such Lessees. The amounts of the debits and credits under (a) and (b) above in respect to Separately Owned Tracts held by the same Lessee may, at the option of such Lessee, be grouped for the purpose of arriving at a combined net debit for all such tracts payable out of such fraction of 7/8 of the Unit Production of oil allocated to all such tracts as will result in the application of the same amount of oil each month to the payment of said combined net debit as would have been applied to the payment of the separate net debits against said several tracts in the absence of such grouping.

(6) Accounting for Lease and Operating Equipment

An accounting for the lease and operating equipment so transferred to and taken over by the Unit shall be had as between the owners thereof, and all Lessees within the Unit Area on the basis of the value thereof determined in accordance with Section IV of the accounting procedure hereto attached marked "Exhibit C", plus a reasonable allowance for the cost of installation, if installed, to be determined by the Operating Committee, and proper charges and credits entered against the several Separately Owned Tracts, all to the end that on and after the Effective Date hereof each of the several Lessees within the Unit Area instead of separately owning the equipment delivered to the Unit by such Lessees, will have exchanged the same for an undivided interest in and to all the equipment so taken over and acquired by the Unit and will have paid

or have been paid, as the case may be, for any difference in value. The amount of any net charge made against a Separately Owned Tract under this paragraph shall be treated and regarded in all respects the same as any other charge for Unit Expense chargeable to such tract.

XIII

Oil in Lease Tankage as of Effective Date

A proper and timely gauge shall be made of all lease or other tanks taken over by the Unit to ascertain the amount of oil in such tanks at the time the Unit assumes and takes over the development and operation of the Unit Area. So much of such oil as is legally produced shall remain and be the property of the parties entitled thereto had not the Unit been created, and upon request, shall be delivered in kind to persons entitled thereto, or in the absence of such request, shall be sold by the Unit Operator for the credit of such persons at not less than the prevailing market price and the proceeds thereof paid to such persons.

XIV

Settlement With Respect to Gas Produced and Underproduction of Gas Prior to Effective Date

A settlement with respect to gas produced and underproduction of gas prior to the Effective Date shall be made as follows:

(a) Each Separately Owned Tract having underproduction to its credit as of the Effective Date shall be given credit for such underproduction, less so much thereof as may have accumulated between November 1, 1946, and the Effective Date, on the basis of 95% of what the Lessee or Lessees of each such tract would have received and been paid therefor, less seller's cost of dehydration, had said gas been produced and sold currently during the period or periods in which such underproduction accumulated.

(b) Each Separately Owned Tract shall be charged with the sales of gas from such tract during the four months'

period from November 1, 1945, to March 1, 1946, plus any overproduction charged against such tract as of the Effective Date other than overproduction as may have accumulated during said four months' period, on the basis of 7/8 of 95% of the average price, less seller's cost of dehydration, received for gas sold from such tract during said four months' period from November 1, 1945 to March 1, 1946.

(c) Unit Operator shall pay to the Lessee or Lessees of each Separately Owned Tract having a net credit after deducting the amount of the charge under (b) from the credit under (a) the amount of such net credit.

(d) The Lessee or Lessees of each Separately Owned Tract against which there is a net charge after deducting the amount of the credit under (a) from the amount of the charge under (b) shall be charged with and shall pay to the Unit Operator the amount of said net charge in the same manner and on the same terms and conditions as if said net charge was a charge for Unit Expense against such Separately Owned Tract.

(e) If the amounts collected under (d) are less than the amounts paid under (c) the difference shall be charged against the several Separately Owned Tracts within the Unit Area in proportion to their respective percentages of interest as set out in Part I of Exhibit B hereof as an item of Unit Expense. If the amounts collected under (d) are more than the amount paid out under (c), the difference shall be credited to the several Separately Owned Tracts and paid to the Lessees thereof in proportion to the percentages of interest of such tracts as set out in Part I of Exhibit B hereof.

(f) The amounts credited to each Separately Owned Tract and paid to the Lessee or Lessees thereof under (c) and (e) shall be distributed and paid by such Lessee or Lessees to the owners of the Oil and Gas Rights in and to such tract, including the Royalty Owners, in the same proportion and to the same extent that they share in the Unit Production allocated to such tract as of the Effective Date hereof.

(g) The underproduction and overproduction of gas and

the amount of sales of gas from any Separately Owned Tract at any time or during any period shall be determined from the books and records of the Commission.

XV

Plan of Operation

To the end that the quantity of Oil and Gas ultimately recoverable from the Unit Area may be substantially increased and waste prevented, the further development and operation of the Unit Area, from and after the Effective Date hereof, shall be conducted by the application to the Unit Area of the following unitized method of operation:

(a) As soon as practical after the Effective Date hereof, the Unit shall make the necessary preparations therefor and with diligence and in accordance with good engineering and production practices engage in pressure maintenance or repressuring operations through the return of gas to the reservoir to the extent and in the manner best calculated to efficiently and without waste result in the greatest ultimate recovery of Oil and Gas from the Unit Area. In so doing, the Unit is authorized to construct, purchase or otherwise acquire and operate such gasoline plants, processing plants or compressor plants and other facilities as may in the best judgment of the Operating Committee be desirable for that purpose, or is authorized, should it so elect, to contract with the owners of an individually owned plant or plants and facilities to render in whole or in part the desired services in connection therewith.

(b) The oil produced from the Unit Area shall be produced from those wells in the Unit Area from which the same can be obtained with the smallest loss or dissipation of reservoir energy reasonably possible under practical operating conditions as they may exist from time to time.

(c) Gas wells and wells which produce oil with gas-oil ratios found to be excessive in relation to the gas-oil ratios of other wells producing oil from the Unit Area shall be shut in or the production therefrom restricted in such manner as to make the most effective utilization of the gas

energy of the reservoir reasonably possible under practical operating conditions as they may exist from time to time.

(d) Production of Oil and Gas from different parts of the Unit Area shall be regulated in such manner as to retard, control or effectively utilize water encroachment, in such manner and to such extent as may be found reasonably possible and economically advisable from time to time.

(e) Gas (other than gas produced in connection with the production of oil) shall be produced from the Unit Area only at such time or times and in such manner as in the judgment of the Operating Committee such gas may be produced without materially decreasing the quantity of oil economically recoverable from the Unit Area.

(f) Such other unitized method or methods of operation as may from time to time be determined by the Operating Committee to be feasible, necessary or desirable to efficiently and substantially increase the ultimate recovery of Oil and Gas from the Unit Area, provided the estimated additional cost thereof does not exceed the value of the additional Oil and Gas to be so recovered.

Nothing herein contained shall prevent the Unit from abandoning or changing in whole or in part any particular method or methods of operation, including the pressure maintenance or repressuring operations required under (a) above, if and in the event, at such time, and to the extent that any such method of operation as applied to the Unit Area is, in the best judgment of the Operating Committee, no longer in accord with good engineering or production practices.

XVI

Right to Information Regarding Unit Operations

Each and all Lessees within the Unit Area shall have access to the entire Unit Area at all reasonable times to inspect and observe operations of every kind and character on the property, and shall have access at all reasonable times to any and all information pertaining to wells drilled, production secured, marketing of Unit Production and to the books, records and vouchers relating to the operation

of the Unit Area. Unit Operator shall, upon request, furnish to any such lessee tank tables, daily gauge and run tickets and reports of stock on hand at the first of each month and any other pertinent information pertaining to the Unit Area or development and operation thereof. All of the rights herein granted shall apply with equal force to the construction and operation by the Unit of any repressuring or pressure maintenance plant or other facilities in connection therewith.

XVII

Liability

No member of the Operating Committee or any other committee shall be personally liable or individually responsible for any act, error, default or omission as a member of such committee or committees.

Neither the Unit nor the Unit Operator shall be liable or responsible under any of the provisions of this Plan of Unitization for any acts or omissions resulting from causes beyond the control of the Unit or such Unit Operator, or other causes which by the exercise of due diligence could not have been prevented or overcome.

Unit Operator shall not be liable or responsible for any damage to the Unit Area or the property, equipment or facilities used in the development and operation thereof, or for the loss of any production arising out of its operation of the Unit Area, except only for bad faith or gross negligence in connection therewith.

If and in the event, notwithstanding the foregoing provisions of this section, the Unit, the Unit Operator or any member of the Operating Committee is held liable by a court of competent jurisdiction for any matter or thing for which it is herein provided the Unit or person so named shall not be liable, the amount of such liability as finally determined shall thereupon be treated, regarded and paid as an item of Unit Expense.

XVIII

Change of Interest

All transfers, assignments and conveyances of any interest in, or with respect to, any of the Separately Owned Tracts within the Unit Area shall be subject to the terms, provisions and conditions of this Plan of Unitization, but shall not be binding on the Unit or the Unit Operator unless and until a photostatic or certified copy of the recorded instrument evidencing such change of ownership has been delivered to the Unit Operator. Each such transfer, assignment or conveyance, whether so stating or not, shall operate to impose upon the person or persons acquiring such interest the obligation of the assignor or grantor with respect to the interest so transferred and shall likewise operate to give and grant to the person or persons acquiring such interest all benefit attributable hereunder to such interest.

XIX

Audits

The Operating Committee shall cause an audit to be made of the books, accounts and records of the Unit Operator in respect to matters pertaining to the Unit and the operation of the Unit Area at least once each year and shall furnish a copy thereof to each of the Lessees within the Unit Area. Each such audit shall cover the period intervening since the last audit. The audit may be made by an auditor or auditing committee from the accounting staff of one or more of the Lessees within the Unit Area, or by an independent auditor or auditors employed by the Unit to make such audit.

XX

Rights of Way

The Unit shall have a servitude and right of way on, over and across all of the lands in the Unit Area for the purpose of laying, constructing, building, using and main-

taining, operating, changing, repairing and removing pipe lines, tanks, telegraph and telephone lines, water lines, and other facilities for the development and operation of the Unit Area for Oil and Gas and for the gathering, handling and disposal of the Unit Production; provided, the Unit shall pay all damages to growing crops, timber, fences, improvements and structures on the land resulting from the exercise of the rights and privileges granted to it in this section.

XXI

Claims, Suits and Judgments Against Individual Owners of Unit Area

In the event claim is made against any of the owners of the Unit Area or any of such owners are sued on account of any matter or thing growing out of the development and operation of the Unit Area by the Unit and over which such owner or owners have no control because of the rights, powers and duties herein granted the Unit, said owner or owners shall immediately notify the Operating Committee in writing of such claim or suit. The Operating Committee shall assume and take over the further handling of such claim or suit and in pursuance thereof may select an attorney or attorneys for that purpose, who, subject to the directions of the Operating Committee, shall have the exclusive right to direct and control the settlement or defense thereof. Should such claim be settled, final judgment be entered against any such defendant or defendants upon said cause of action and any such defendant is required to pay or satisfy such judgment or expense of litigation in whole or in part, the amount of such settlement or judgment shall be treated, regarded and paid as any other item of Unit Expense. Nothing herein contained shall apply to or relieve any such owner or owners of liability which may have accrued prior to the effective date of this Plan of Unitization.

XXII

Title Information

Upon request of either the Operating Committee or the Unit Operator, the Lessees of the several Separately Owned Tracts shall furnish and make available to the Unit or the Unit Operator, as the case may be, an abstract brought to the date of the request, together with all other title information in the possession and files of such Lessees, title opinions, original or true copies of all leases, assignments, contracts, curative matter and all other data and information pertaining to or otherwise affecting titles to the Oil and Gas Rights in and to the Unit Area.

XXIII

Other Formations

It is understood that the common source of supply described herein as the Unit Area, namely, the Medrano Sand of the West Cement Field, underlies and may overlie other reservoirs or common sources of supply of Oil and Gas not a part of the aforesaid Medrano Sand or a part of the Unit Area of the Unit created hereby. Except as specifically provided in this Plan of Unitization, all rights of any and all persons in and to such other reservoirs or common sources of supply of Oil and Gas and the production therefrom, together with the right of ingress and egress and the use of the surface of the Unit Area for the exploration, development and operation of such other reservoirs or common sources of supply of Oil and Gas, are expressly reserved unto the separate owners thereof and shall remain unaffected by the creation of the Unit and the adoption of this Plan of Unitization, all to the same extent as if this Plan of Unitization had not been adopted except that in the exercise of such rights the owners thereof shall have due regard for the rights granted the Unit with respect to its operations hereunder. Likewise, any reference in this Plan of Unitization to a Separately Owned Tract or to the Unit Area, although in gen-

eral terms broad enough to include the surface and all underlying common sources of supply of Oil and Gas, shall have reference to the lands embraced within such Separately Owned Tract and within the Unit Area only in relation to the Medrano Sand of the West Cement Field.

XXIV

Abandonment of Wells

If the Operating Committee at any time desires to abandon any well completed in the Medrano Sand and salvage the casing and other equipment that is a part of the well, the Lessee or Lessees of the Separately Owned Tract on which such well is located shall be notified in writing of such decision and shall have and be granted thirty (30) days from receipt of such notice within which to elect to take over such well for the purpose of completing the same in some other formation not a part of the Unit Area. Any such Lessee electing to take over such a well shall pay the salvage value of the casing and other equipment in and on the well, determined in accordance with Section IV of the accounting procedure hereto attached marked "Exhibit C", and shall agree to assume full responsibility for the proper plugging and abandonment thereof at such time as the well is ultimately abandoned. No such well shall be operated or used for the production of Oil and Gas from the Unit Area and to that end the Lessee taking over such a well shall immediately cause the Medrano Sand in such well to be sealed off in a manner satisfactory to the Operating Committee. In the event the Lessee or Lessees of such a Separately Owned Tract do not elect to take over such well, the Unit Operator shall proceed to properly plug and abandon the same and salvage the casing and other equipment therefrom.

XXV

Abandonment of Operations and Dissolution of Unit

At such time as it is determined by the Operating Committee that Unit Production can no longer be produced

from the Unit Area in paying quantities the further development and operation of the Unit Area by the Unit shall be abandoned, the Unit dissolved and its affairs wound up.

Upon abandonment of Unit Operations,

(a) All rights in and to the several Separately Owned Tracts shall revert to the separate owners and Lessees thereof;

(b) The owner or Lessee of a Separately Owned Tract desiring to take over and continue to operate a well located on such Separately Owned Tract may do so by paying the salvage value of the casing and other equipment in and on the well determined in accordance with Section IV of the accounting procedure hereto attached marked "Exhibit C" and by agreeing to properly plug and abandon the well at such time as it is ultimately abandoned;

(c) With respect to all wells not taken over by the owner or Lessees of the Separately Owned Tracts as aforesaid, the Unit Operator shall salvage so much of the casing and other equipment therein as can economically and reasonably be salvaged and shall cause such well to be properly plugged and abandoned;

(d) The salvaging, liquidation or other distribution of assets and properties used in the operation of the Unit Area shall be in a manner determined by the Operating Committee; provided, any Lessee desiring to take its share of the physical assets or any portion thereof in kind may do so. All such assets and property shall belong to the several Lessees in proportion to their respective interests in the Unit.

At such time as the Unit Operations are abandoned and the affairs of the Unit wound up, the Unit shall submit for filing a declaration to that effect with the Secretary of the Corporation Commission and with the County Clerk of Caddo County, Oklahoma, whereupon the rights, powers and duties of the Unit shall be at an end.

XXVI

Amendment to Plan of Unitization and Enlargement of Unit

Any amendment of this Plan of Unitization or any enlargement of the Unit or Unit Area shall be in accordance with the provisions of Sections 11 and 12 of House Bill 339 of the 1945 Legislature of the State of Oklahoma or any amendment thereto.

XXVII

Subscribers

Provision is made below for the signing of this Plan of Unitization by Lessees within the Unit Area who wish to expressly signify their agreement to the terms, provisions and conditions hereof. Such Lessees may sign either as Unqualified or Qualified Subscribers. Those signing as Unqualified Subscribers agree to all the terms, provisions and conditions hereof, including the agreement to participate in carrying the Lessees who elect to be carried under the provisions of Section XI. Those signing as Qualified Subscribers agree to all the terms, provisions and conditions hereof, except that they reserve the right to be carried in respect to the payment of Unit Expense as is provided in Section XI and do not agree to participate in carrying the other Lessees who elect to be carried under the terms of said Section. This Plan of Unitization may be so signed by the subscribers hereto at any time, the original of which shall at all times from and after the approval hereof by the Commission remain on file in the office of the Secretary of the Commission. In lieu of signing the original of this Plan of Unitization, any Lessee desiring to subscribe hereto, either as an Unqualified or Qualified Subscriber, may do so by separate instrument filed with the Secretary of the Commission, all with the same effect as if such Lessees signed the original.

The signing hereof by any Lessee shall be binding upon the heirs, personal representatives, successors and assigns of such Lessees.

The signing hereof by each of the subscribers hereto is

conditioned upon the approval of this Plan of Unitization by the Corporation Commission.

The signing hereof by the Unqualified Subscribers is further conditioned upon the signing hereof by Unqualified Subscribers who, under this Plan of Unitization based on present lease ownership, will own sixty-five per cent (65%) or more in interest in the Unit.

UNQUALIFIED SUBSCRIBERS:

AMERADA PETROLEUM CORPORATION

By .....

Attest:

.....

ANDERSON-PRICHARD OIL CORPORATION

By .....

Attest:

.....

CITIES SERVICE OIL COMPANY

By .....

Attest:

.....

FOSTER PETROLEUM CORPORATION

By .....

Attest:

.....

GULF OIL CORPORATION

By .....

Attest:

.....

MAGNOLIA PETROLEUM COMPANY

By .....

Attest:

.....

PALMER OIL CORPORATION

By .....

Attest:

.....

PHILLIPS PETROLEUM COMPANY

By .....

[Continued on p. 174]

Attest:

RAY STEPHENS, INC.
By

Attest:

STEPHENS PETROLEUM COMPANY
By

Attest:

SUNRAY OIL CORPORATION
By

Attest:

QUALIFIED SUBSCRIBERS:

By

Attest:

By

Attest:

By

Attest:

(Here follows map, Exhibit A., fol. 144)

R-10-W.

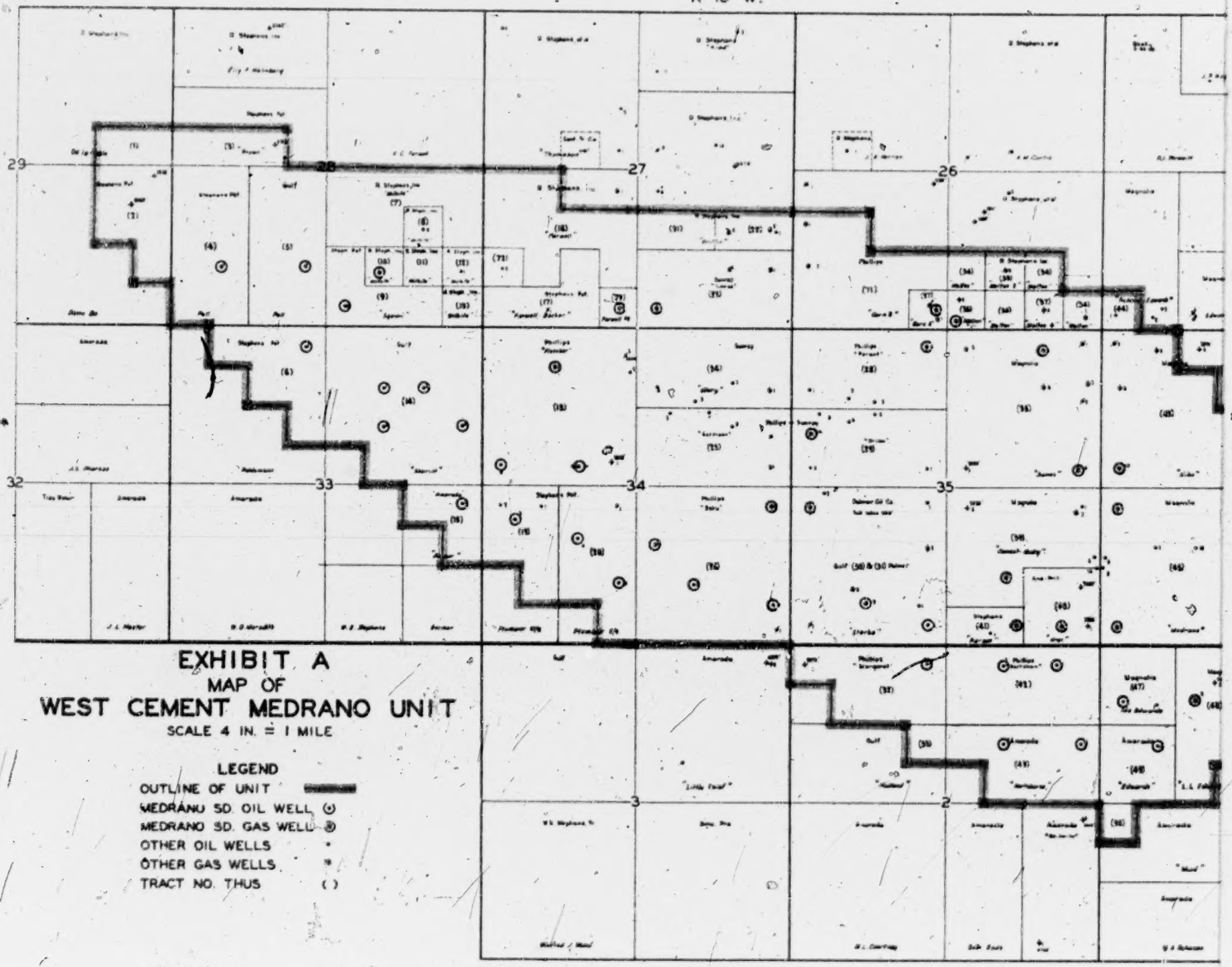


EXHIBIT A
MAP OF
WEST CEMENT MEDRANO UNIT
SCALE 4 IN. = 1 MILE

LEGEND

OUTLINE OF UNIT	
MEDRANO SD. OIL WELL	⊙
MEDRANO SD. GAS WELL	⊛
OTHER OIL WELLS	•
OTHER GAS WELLS	*
TRACT NO. THUS	( )

R-9-W.

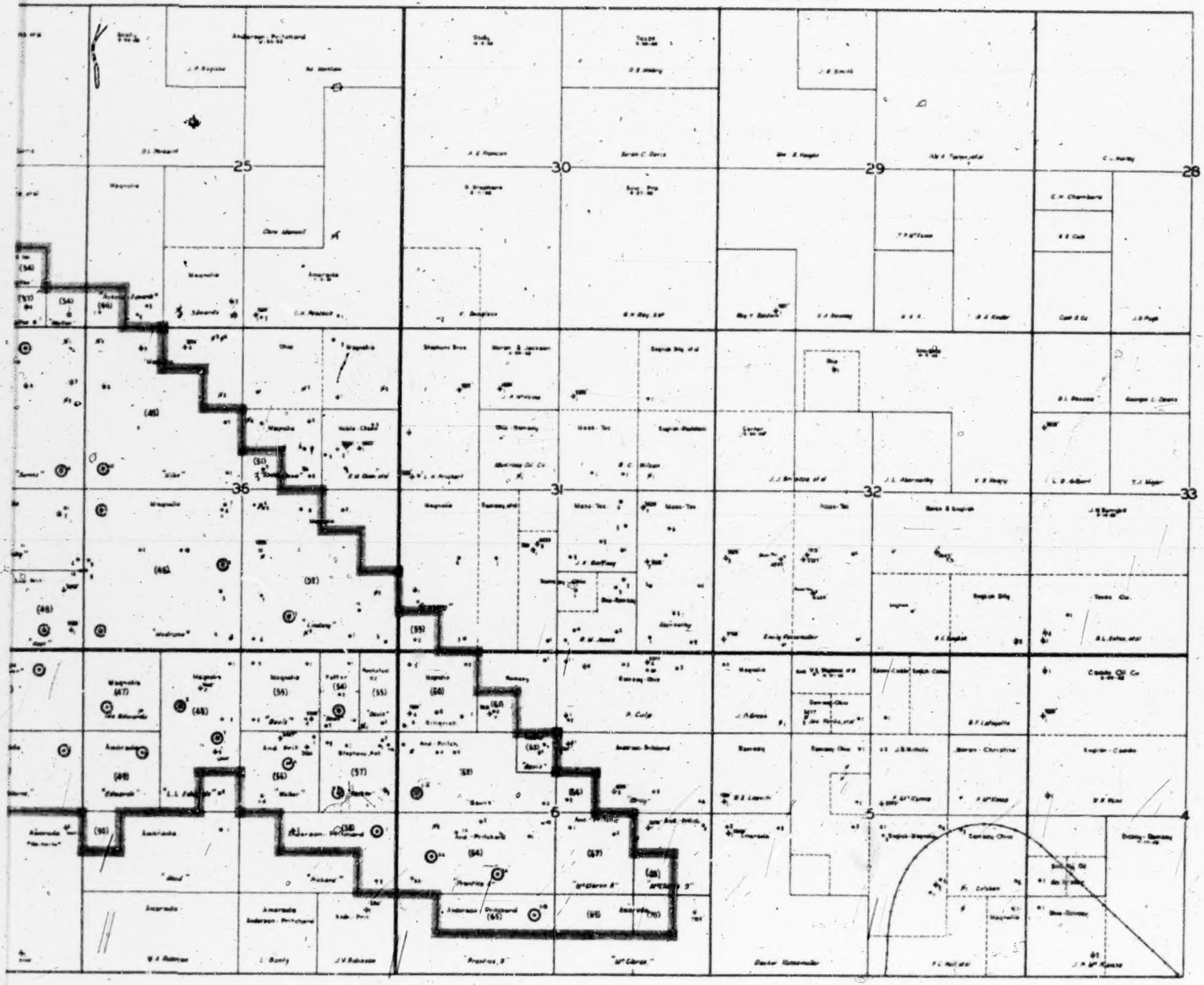


EXHIBIT "D"

Operator, Lease and Well	Tract Number	Assigned Value of Well
Amerada Petroleum Corporation		
Beemer #1	15	$59,038
Edwards #1	49	53,899
Hartshorn #1	43	57,995
Hartshorn #2	43	58,986
Anderson-Prichard Oil Corporation		
Davis #1-A	62	20,483
Hays #1	40	20,387
Pickard #1	58	51,198
Prentice "A" #3	64	52,240
Prentice "A" #4	64	50,924
Prentice "B" #1	65	53,686
Walker #2	56	52,168
Gulf Oil Corporation		
Pell #1	5	50,125
Sherritt #1	14	55,586
Sherritt #2	14	52,920
Sherritt #3	14	52,929
Sherritt #4	14	59,073
Magnolia Petroleum Company		
I. Edwards #2	47	54,085
L. L. Edwards #5	48	20,955
L. L. Edwards #7	48	20,869
Cement-Henley #5	39	20,185
Lindsay #12	52	17,323
Medrano #6	46	16,632
Medrano #7	46	14,993
Medrano #11	46	19,458
Niles #10	45	13,826
Sames #6	38	14,022
Sames #8	38	13,666
Palmer Oil Corporation		
Sterba #3	31	17,730
Sterba #4	31	55,064
Sterba #7	31	55,126
Phillips Petroleum Company		
Farwell #4	28	14,494
Fletcher #5	18	17,968
Fletcher #6	18	54,832
Fletcher #7	18	49,154
Garn "A" #5	27	14,188
Hartshorn #1	42	54,693
Hartshorn #2	42	54,989
Margaret #1	32	56,908
Oaks #1	26	18,186
Oaks #2	26	53,835
Oaks #3	26	55,329
Oaks #4	26	53,771
Potter		
Davis #1	54	19,632

EXHIBIT "D"—Continued

Operator, Lease and Well	Tract Number	Assigned Value of Well
Ray Stephens, Inc.		
Melton 1, #1	36	14,319
Wilhite #3	10	19,116
Farwell #2	16	15,812
Stephens Petroleum Company		
Pierson #1	41	21,797
Plummer W/2, #3	19	57,669
Plummer E/2, #4	20	56,107
Plummer E/2, #5	20	57,663
Pohleman #1	6	56,837
Samwill #1	9	50,090
Pell #1	4	56,625
Walker #1	57	57,834
Sunray Oil Corporation		
Dixon #1-A	29	16,376
Loose #3	23	15,376
Total		$2,165,571

EXHIBIT "B"

Part II

Fo the purpose of this exhibit:

(a) The following amounts of the Unit Production of Oil shall be regarded as *"Normal Production"* for the years shown opposite the amounts so named:

Year Following Effective Date	Daily Average in Barrels
1st year	5,225 Barrels
2nd year	5,075 "
3rd year	4,925 "
4th year	4,775 "
5th year	4,775 "
6th year	4,203 "
7th year	3,872 "
8th year	3,788 "

(b) All Unit Production of Oil in excess of said Normal Production shall be regarded as *"Excess Production"*.

(c) *"Time of Acceleration"* shall mean and include the time from the Effective Date to the end of five consecutive periods, each consisting of 12 calendar months, with the exception that any month shall not be counted as a month fixing the term of each such period if the Unit Production of Oil during such month is less than the Normal Production as a sole and direct consequence of a statewide proration order of the Corporation Commission. The five periods aforesaid shall be designated consecutively as Periods 1, 2, 3, 4 and 5.

(d) *"Time of Deceleration"* shall mean and include the time from the end of the Time of Acceleration and continuing until such time as the total number of additional barrels of Oil allocated to Separately Owned Tracts numbered 56, 57, 58, 64 and 65 during the Time of Acceleration as hereinafter provided, is offset by a like number of barrels of Oil allocated to the other Separately Owned Tracts during such Time of Deceleration, as hereinafter provided.

During the Time of Acceleration the Normal Production of Oil as hereinabove defined shall be allocated to all the several Separately Owned Tracts within the Unit Area in proportion to their respective percentages of interest shown in Part I of this Exhibit.

The Excess Production, if any, in any month during the Time of Acceleration and if sufficient for that purpose, shall be allocated to Separately Owned Tracts numbered 56, 57, 58, 64 and 65 in such amounts as to allocate to each such Separately Owned Tract the following amounts of Oil in excess of the number of barrels of Normal Production allocated to such Separately Owned Tracts.

Number of Period	Percent in Excess of Normal
1	100%
2	75%
3	50%
4	25%
5	10%

If the Excess Production in any month during the Time of Acceleration exceeds the amount required to satisfy the aforesaid increased allocations to the 5 Separately Owned Tracts last hereinabove named, the excess shall be allocated to all of the several Separately Owned Tracts within the Unit Area in proportion to their respective percentages of interest as shown in Part I of this Exhibit.

If the Excess Production, if any, in any month during the Time of Acceleration is not sufficient to satisfy in full the aforesaid increased allocations to the 5 Separately Owned Tracts hereinabove named, then and in that event the amount of such Excess Production shall be allocated to said 5 Separately Owned Tracts in the proportion that the percentage of interest of each such tract bears to the sum of the percentages of interest of all of said 5 Tracts, as shown in Part I of this Exhibit.

During the Time of Deceleration the amount of the Unit Production of Oil allocated each month to the 5 Separately Owned Tracts hereinabove specifically named, shall be 50% of their respective percentages of interest as shown in Part I of this Exhibit, until such time as the total accumulated number of barrels of Oil so withheld from such tracts by reason of said 50% reduction in percentage shall exactly equal the total accumulated number of additional barrels of Oil allocated to said tracts by reason of the special increase in allocation granted such tracts during the Time of Acceleration as hereinabove provided. The Unit Production of Oil so withheld from said 5 Separately Owned Tracts hereinabove specifically named by reason of said 50% reduction in the percentage allocation to such tracts shall be allocated to the other Separately Owned Tracts in the Unit Area, exclusive of the 5 tracts hereinabove specifically named, in the proportion that the percentages of interest of each bears to the sum of the percentages of interest of all such other tracts, exclusive of the 5 specifically named tracts, as shown in Part I of this Exhibit.

After the End of the Time of Deceleration all Unit Production shall be allocated to all the several Separately

Owned Tracts within the Unit Area in proportion to their respective percentages of interest as shown in Part I of this Exhibit.

EXHIBIT "C"

Accounting Procedure

The term "joint property" as herein used shall be construed to mean the Unit Area covered by the Plan of Unitization to which this "Accounting Procedure" is attached, together with any processing or other plants and facilities used in the development and operation of such Unit Area.

The term "Operator" as herein used shall be construed to mean the Unit Operator designated to conduct the development and operation of the joint property for the joint account.

I—Development and Operating Charges

Subject to limitations hereinafter prescribed, Operator shall charge the joint account with the following items:

(1) Delay or other rentals, when such rentals are paid by Operator for the joint account.

(2) Labor, teaming and other services necessary for the development, maintenance and operation of the joint property.

(3) Materials, equipment and supplies purchased or furnished by Operator from its warehouse stocks or from its other leases for use on the joint property. Insofar as is practical and consistent with efficient and economical operation, only such materials shall be purchased for or transferred to the joint property as are required for immediate use, and the accumulation of warehouse or lease stock on the joint property shall be avoided.

(4) Moving materials to the joint property from vendor's or from Operator's warehouse in the district or from other properties of Operator, but in either of the last events no charge shall be made to the joint account for a

distance greater than the distance from the nearest reliable supply store or railway receiving point.

(5) Moving surplus materials from the joint property to outside vendees, if sold f. o. b. destination, or minor returns to Operator's warehouse or other storage point. No charge shall be made to the joint account for moving major surplus materials to Operator's warehouse or other storage point for a distance greater than the distance to the nearest reliable supply store or railway receiving point, except by authority of the Operating Committee; and no charge shall be made to the joint account for moving materials to other properties belonging to Operator, except by authority of the Operating Committee.

(6) Use of and service by Operator's exclusively owned equipment and utilities as provided in Paragraph (6) of Section II: "Basis of Charges to Joint Account."

(7) Damages or losses incurred by fire, flood, storm or from any other cause not controllable by Operator through the exercise of reasonable diligence. Operator shall furnish the Operating Committee written notice of damages or losses incurred by fire, storm, flood or other natural or accidental causes as soon as practicable after report of the same has been received by Operator.

(8) Expenses of litigation, liens, judgments and liquidated claims involving the joint property or incident to its development and operation. Actual expenses incurred by Operator in securing evidence pertaining to the joint property shall be a proper charge against the joint account.

(a) When any case, by prior agreement, is handled by Operator's legal staff, thereby eliminating the retaining of outside counsel, a charge commensurate with the cost of services rendered may be made to the joint account. Charges of this nature shall not be rendered until the Operating Committee has approved the amount thereof.

(b) Fees and expenses of outside attorneys shall not be charged to the joint account except where the employment of such outside attorneys is authorized by the Operating Committee.

(9) All taxes paid for the benefit of the parties in in-

terest including ad valorem, property, gross production, occupation and any other taxes assessed against the jointly-owned properties, the production therefrom or the operations thereon.

(10) Insurance:

(a) Premiums paid for insurance carried for the benefit of the joint account together with all expenditures incurred and paid in settlement of any and all losses, claims, damages, judgments and other expenses, including legal services, not recovered from insurance carrier.

(b) If no insurance is required to be carried, all actual expenditures incurred and paid by Operator in settlement of any and all losses, claims, damages, judgments and any other expenses, including legal services, shall be charged to the joint account.

(11) Overhead:

In lieu of any charge for the salaries and expense of officers and employees of Operator other than employees directly assigned to the operation of the joint property and employees performing special work pursuant to authority of the Operating Committee, and, in lieu of any charge for office and camp expense other than the expense of a field office or camp, if any, required for the operation of the joint property, the Operator shall have the right to charge the joint account with the following overhead charges:

(a) $150.00 per month for each drilling well, beginning on the date the well is spudded and terminating when it is on production or is plugged, as the case may be, except that no charge shall be made during suspension of drilling operations for fifteen (15) or more consecutive days.

(b) $50.00 per well per month for the first ten (10) producing wells.

(c) $40.00 per well per month for the second ten (10) producing wells.

(d) $25.00 per well per month for all producing wells over twenty (20).

(e) $20.00 per well per month for injection wells.

(f) An allowance to be agreed upon between the Operator and Operating Committee with respect to the construction and operation of any gas injection plant and facilities if and when the construction and operation thereof is authorized.

In connection with overhead charges, the status of wells shall be as follows:

(1) Producing gas wells shall be included in overhead schedule the same as producing oil wells.

(2) Wells permanently shut down but on which plugging operations are deferred, shall be dropped from overhead schedule at the time the shutdown is effected. When such wells are plugged, overhead shall be charged at the producing well rate during the time required for plugging operation.

(3) Wells being plugged back or drilled deeper shall be included in overhead schedule the same as drilling wells.

(4) If and when a well is temporarily shut down (other than for proration) and not produced or worked upon for a period of a full calendar month, it shall not be included on the overhead schedule for such month.

(5) Salt water disposal wells shall not be included in overhead schedule.

The above specific overhead rates are subject to adjustment and shall be amended from time to time by agreement between Operator and the Operating Committee if, in practice, they are found to be insufficient or excessive.

(12) Warehouse Handling Charges: None.

(13) Any other expenditures incurred by Operator for the necessary and proper development, maintenance, and operation of the joint property, except that Operator shall not charge the joint account with any expenditure or contribution made by Operator towards employes' stock purchase plan, group life insurance, pension, retirement, or bonus, other than such expenditures or contributions imposed or assessed by governmental authority.

II—Basis of Charges to Joint Account

(1) Outside Purchases: All materials and equipment purchased and all service procured from outside sources shall be charged at their actual cost to Operator, after deducting any and all trade or cash discounts actually allowed off invoices, or received by Operator.

(2) New materials furnished by Operator (Condition "A"):

New materials transferred to the joint property from Operator's warehouse or other properties shall be priced f. o. b. the nearest supply store or railway receiving point at replacement cost of the same kind of materials. This will include large equipment such as tanks, rigs, pumps, boilers and engines. All tubular goods (2" or over) shall be charged on the basis of mill shipment or carload price. Other materials, where the replacement cost cannot be readily ascertained, may, for the purposes of consistency and convenience, be charged on the basis of a reputable supply company's preferential list price f. o. b. nearest supply store or railway receiving point to the joint property prevailing on the date of transfer of the materials to the joint property.

In determining the value of any transferred materials, all special and preferential discounts shall be allowed but the regular cash discount shall not be considered.

(3) Secondhand materials furnished by Operator (Conditions "B" and "C"):

(a) Tubular goods (2" and over), fittings, machinery and other equipment which is in sound and serviceable condition at date of transfer, will be classed as condition "B" and charged at 75% of the price of new materials, in accordance with the provisions of Paragraph (2) above.

(b) Tanks, derricks, and buildings or other equipment involving erection costs shall be charged on a basis not to exceed 75% of knocked-down new price for similar materials.

(c) Other secondhand materials, such as units of machinery or other equipment that is serviceable, but substantially not good enough to be considered first-class secondhand material when transferred to the joint property, shall be classed as condition "C" and charged at 50% of the new price.

(d) There may also be cases where some items of equipment, due to their unusual condition, should be fairly and equitably priced by Operator.

(4) Warranty of Materials Furnished by Operator: Operator does not warrant the materials furnished from its warehouse or other properties beyond or back of the dealers' or manufacturer's guaranty, and in case of defective materials, credits shall not be passed until adjustment has been received by Operator from the manufacturers or their agents.

(5) If materials required are not available in Operator's surplus stocks, Operator shall whenever in its judgment it is practical to do so, give to other lessees within the Unit Area opportunity of furnishing the materials required in proportion to their interest, provided that the same can be furnished at the time such materials are required, and further provided that any such materials so furnished shall be in condition acceptable to Operator and shall be charged to the joint account on the same terms and conditions as are provided herein to cover the furnishing of materials by Operator.

(6) Operator's Exclusively-owned Facilities: The following rates shall apply to service rendered to the joint property by facilities owned exclusively by Operator:

(a) Water service, gas, teaming, power, and compressor service: All at rates currently prevailing in the field where the joint property is located.

(b) Automotive Equipment: Rates commensurate with cost of ownership and operation and in line with schedule of rates adopted by the Petroleum Motor Transport Association as recommended uniform standardized charges against the joint account. Automotive charges will be based on use in actual service on or in connection with

the joint property. Truck, tractor and pulling unit rates shall include wages and expenses of driver.

(c) A fair rate shall be charged for the use of drilling and cleaning-out tools and any others items of Operator's fully-owned machinery or equipment which shall be ample to cover maintenance, repairs, depreciation and the service furnished the joint property. Provided, however, that such charges shall not exceed those currently prevailing in the field where the joint property is located.

(d) Whenever requested, Operator shall inform the other lessees within the Unit Area in advance of the rates it proposes to charge.

(e) Rates shall be revised and adjusted from time to time when found to be either excessive or insufficient.

III—Disposal of Lease Equipment and Materials

(1) Materials purchased by Operator shall be credited to the joint account and included in the monthly statement of operations for the month in which the materials are removed from the joint property.

(2) Materials purchased by other lessees within the Unit Area shall be invoiced by Operator and paid for by such lessees to Operator immediately following receipt of invoice and delivery of materials. Operator shall thereupon immediately pass credit to the joint account and include the same in the monthly statement of operations for the month in which the materials were paid for by such lessees.

(3) Division of materials in kind, if made between Operator and other lessees within the Unit Area shall be in proportion to their respective interests in the joint property. Each party will thereupon be charged individually with the value of the materials received or receivable and corresponding credits will be made to the joint account by the Operator, and, both credits shall appear in the same monthly operating statement.

(4) Sales to outsiders of major materials shall be made only with the approval of the Operating Committee as to both terms and price and where made the proceeds shall

be credited by Operator to the joint account at the full amount collected from vendee. Any claims by vendee for defective materials or otherwise shall be charged back to the joint account, if and when paid by Operator.

IV—Basis of Pricing Materials Transferred from Joint Account

Materials and equipment purchased by either Operator or the lessees in the Unit Area, or divided in kind between them, unless otherwise approved by the Operating Committee, shall be valued on the following basis of condition and price: (New price as used in the following paragraphs shall have the same meaning and application as that used above in Section II: "Basis of Charges to Joint Account").

(1) New Materials: (Condition "A") being new equipment or supplies purchased or procured from the joint property but never used thereon; at 100% of current new prices.

(2) Good Secondhand Materials: (Condition "B") being good serviceable materials which are further usable without repair, at:

(a) 75% of current new prices, if materials were new when originally charged to the joint property.

(b) 75% of current new prices less depreciation consistent with their usage on and service to the joint property, if materials were originally charged to the joint property as secondhand at 75% of new prices.

(3) Other Used Materials: (Condition "C") being materials further usable for their original function only after repair and reconditioning; at 50% of current new prices.

(4) Bad Order Materials: (Condition "D") being materials not further usable for their original function but for possible other service; at 25% of current new prices.

(5) Junk: (Condition "E") being obsolete and unserviceable materials; at prevailing junk prices in the district. Where practicable, junk should be disposed of at the joint property.

(6) Temporarily Used Materials: When the use of cer-

tain items of equipment on the joint property has been only temporary, and the time of actual use thereon does not justify the deduction of depreciation as listed in (a) and (b) of Paragraph (2) hereof, such materials will be priced on a basis that will leave a net charge against the joint account consistent with the service rendered and adequate for the time the materials were in use.

V—Inventories

Periodic inventories of the materials and equipment of the joint property, which shall include such materials and equipment as are ordinarily considered controllable by Operators of oil and gas properties, shall be taken by Operator at such times and under such conditions as may be prescribed by the Operating Committee.

Exhibit "B"

Part I

Tract Number	Lease Name	Legal Description	Sec.	Twp.	Range	Operator	Percentage of Interest in Unit
1	Odla-Table	S/2 SE NE	29	6N	10W	Ray Stephens, Inc.	0.18442%
2	Dome-Bo	NE SE & NE SE SE	29	6N	10W	Stephens Petroleum Co.	0.78785
3	Brown	S/2 SW NW & SW SE NW	28	6N	10W	Stephens Petroleum Co.	0.08253
4	Pell	W/2 SW	28	6N	10W	Stephens Petroleum Co.	3.51358
5	Pell	E/2 SW	28	6N	10W	Gulf Oil Corporation	2.65959
6	Pohleman	NE NW & NE SE NW & NE NW NW	33	6N	10W	Stephens Petroleum Co.	1.96799
7	Wilhite	N/2 SE less SW NE SE	28	6N	10W	Ray Stephens, Inc.	0.07288
8	Wilhite	SW NE SE	28	6N	10W	Ray Stephens, Inc.	0.01154
9	Samwill	W/2 SW SE & SE SW SE & SW SE SE	28	6N	10W	Stephens Petroleum Co.	1.18366
10	Wilhite	NE SW SE	28	6N	10W	Ray Stephens, Inc.	0.04615
11	Wilhite	NW SE SE	28	6N	10W	Ray Stephens, Inc.	0.01540
12	Wilhite	NE SE SE	28	6N	10W	Ray Stephens, Inc.	0.01749
13	Wilhite	SE SE SE	28	6N	10W	Ray Stephens, Inc.	0.02700
14	Sherritt	NE/4 less SW SW NE	33	6N	10W	Gulf Oil Corporation	13.11109
15	Beemer	NE SE less SW NE SE	33	6N	10W	Amerada Petroleum Co.	1.12313
16	Farwell	NW SW & NE SW SW & S/2 NE SW & NE SE SW	27	6N	10W	Ray Stephens, Inc.	0.07715
17	Farwell-Becker	S/2 SW SW & W/2 SE SW	27	6N	10W	Stephens Petroleum Co.	0.11581
18	Fletcher	NW/4	34	6N	10W	Phillips Petroleum Co.	5.37390
19	Plummer—W/2	NW SW & NE SW SW	34	6N	10W	Stephens Petroleum Co.	4.09025
20	Plummer—E/2	E/2 SW less SW SE SW	34	6N	10W	Stephens Petroleum Co.	6.86555
21	Griffin	S/2 NW SE	27	6N	10W	Ray Stephens, Inc.	0.00828
22	Griffin	S/2 NE SE	27	6N	10W	Ray Stephens, Inc.	0.00163
23	Loose	S/2 SE	27	6N	10W	Sunray Oil Corporation	0.31227
24	Ulrey	N/2 NE	34	6N	10W	Sunray Oil Corporation	0.43240
25	Garrison	S/2 NE	34	6N	10W	Sunray Oil Corporation	0.31484
26	Oaks	SE/4	34	6N	10W	Phillips Petroleum Co.	11.21393
27	Garn "A"	SE SE SW	26	6N	10W	Phillips Petroleum Co.	0.02277
28	Farwell	N/2 NW	35	6N	10W	Phillips Petroleum Co.	0.18958
29	Dixon	S/2 NW	35	6N	10W	Sunray Oil Corporation	0.52429
30	Sterba (below 6000')	SW/4	35	6N	10W	Gulf Oil Corporation	2.15688
31	Sterba (above 6000')	SW/4	35	6N	10W	Palmer Oil Corporation	5.51614
32	Margaret	N/2 NW less SW NW NW	2	5N	10W	Phillips Petroleum Co.	3.87549
33	Holland	NE SE NW	2	5N	10W	Gulf Oil Corporation	0.06049
34	Melton	NW SW SE & SE SW SE & NW SE SE & SE SE SE	26	6N	10W	Ray Stephens, Inc.	0.02614
35	Melton No. 2	NE SW SE	26	6N	10W	Ray Stephens, Inc.	0.00198

EXHIBIT "B"

Part I

Tract Number	Lease Name	Legal Description	Sec.	Twp.	Range	Operator	Percentage of Interest in Unit
36	Melton No. 1	SW SW SE	26	6N	10W	Ray Stephens, Inc.	0.01211
37	Melton No. 4	SW SE SE	26	6N	10W	Ray Stephens, Inc.	0.01693
38	Sames	NE/4	35	6N	10W	Magnolia Petroleum Co.	0.57283
39	Cement-Henley	N/2 SE & N/2 SW SE	35	6N	10W	Magnolia Petroleum Co.	1.59617
40	Hays	SE SE	35	6N	10W	Anderson-Prichard Oil Corp.	0.58977
41	Pierson	S/2 SW SE	35	6N	10W	Stephens Petroleum Co.	1.47267
42	Hartshorn	N/2 NE	2	5N	10W	Phillips Petroleum Co.	8.23583
43	Hartshorn	S/2 NE less SW SW NE	2	5N	10W	Amerada Petroleum Corp.	4.03085
44	Pickard Edwards	SW SW SW	25	6N	10W	Magnolia Petroleum Co.	0.00422
45	Niles	NW NW & S/2 NW & SW NE NW	36	6N	10W	Magnolia Petroleum Co.	0.36728
46	Medrano	SW/4	36	6N	10W	Magnolia Petroleum Co.	0.59865
47	I. Edwards	NW NW	1	5N	10W	Magnolia Petroleum Co.	2.36562
48	L. L. Edwards	E/2 NW	1	5N	10W	Magnolia Petroleum Co.	1.86102
49	Edwards	SW NW	1	5N	10W	Amerada Petroleum Co.	3.54720
50	Wood	NW NW SW	1	5N	10W	Amerada Petroleum Co.	0.18412
51	Caddo-Rowe	SW SW NE	36	6N	10W	Magnolia Petroleum Co.	0.00495
52	Lindsay	S/2 SE & NW SE & SW NE SE	36	6N	10W	Magnolia Petroleum Co.	0.31433
53	Davis	NW NE	1	5N	10W	Magnolia Petroleum Co.	0.34024
54	Davis	W/2 NE NE	1	5N	10W	Potter	0.06642
55	Davis	E/2 NE NE	1	5N	10S	F. L. Rookstool	0.03249
56	Walker	SW NE	1	5N	10W	Anderson-Prichard Oil Corp.	1.55533
57	Walker	SE NE	1	5N	10W	Stephens Petroleum Co.	1.18658
58	Pickard	N/2 NE SE & SE NE SE & NE NW SE	1	5N	10W	Anderson-Prichard Oil Corp.	1.09412
59	Gregory	SW SW SW	31	6N	9W	Magnolia Petroleum Co.	0.00329
60	Gingrich	NW NW	6	5N	9W	Magnolia Petroleum Co.	0.02882
61	Gingrich	SW NE NW	6	5N	9W	Stanolind Oil & Gas Co.	0.00133
62	Davis	SW NW & S/2 SE NW & NW SE NW	6	5N	9W	Anderson-Prichard Oil Corp.	0.40951
63	Davis	NE SE NW	6	5N	9W	Lloyd Noble	0.00073
64	Prentice "A"	N/2 SW	6	5N	9W	Anderson-Prichard Oil Corp.	2.58742
65	Prentice "B"	N/2 SE SW & NE SW SW	6	5N	9W	Anderson-Prichard Oil Corp.	0.52078
66	Wray	SW SW NE	6	5N	9W	Anderson-Prichard Oil Corp.	0.00065
67	McClaren "A"	NW SE	6	5N	9W	Anderson-Prichard Oil Corp.	0.06316
68	McClaren "B"	SW NE SE	6	5N	9W	Anderson-Prichard Oil Corp.	0.01446
69	McClaren	N/2 SW SE	6	5N	9W	Amerada Petroleum Co.	0.13116
70	McClaren	NW SE SE	6	5N	9W	Amerada Petroleum Co.	0.02458
71	Garn "B"	S/2 NW SW & SW SW & W/2 SE SW & NE SE SW	26	6N	10W	Phillips Petroleum Co.	0.04096
72	Farwell #2	SE SE SW & NW SW SW	27	6N	10W	Ray Stephens, Inc.	0.13935
TOTAL							100.00000%

NOTE: All leases are subject to the adjustment outlined in Exhibit "B"—Part II.

APPENDIX "F"

OIL AND GAS LEASE OWNED BY THE PALMER OIL CORPORATION, WITH ROYALTY RIGHTS OWNED BY PAUL STERBA AND PAUL STERBA, JR.

Filed for record Feb. 26, 1936 at 11:00 A. M. R. L. Goodfellow County Clerk (Seal)

Oil & Gas Lease

Agreement, made and entered into the 12th day of February, 1936, by and between Paul Sterba and wife, Gertrude K. Sterba, and Helen Catherine Jackson, nee Sterba, and husband Clifford Jackson, of Kay County & Canadian County, Oklahoma, hereinafter called lessor (whether one or more) and Chris Pearson, hereinafter called lessee:

Witnesseth: That the said lessor, for and in consideration of One & No/Dollars, cash in hand paid, the receipt of which is hereby acknowledged, and of the covenants and agreements hereinafter contained on part of lessee to be paid, kept and performed, has granted, demised, leased and let and by these presents does grant, demise, lease and let unto the said lessee for the sole and only purpose of mining and operating for oil and gas and of laying of pipe lines, and of building tanks, powers, stations and structures thereon to produce save and take care of said products, all that certain tract of land situate in the county of Caddo, State of Oklahoma, described as follows, to-wit:

The Southwest Quarter, of Section 35, Township 6 N, Range 10 W, and containing 160 acres, more or less.

It is agreed that this lease shall remain in force for a term of five years from this date, and as long thereafter as oil or gas or either of them is produced from said land by lessee.

In consideration of the premises the said lessee covenants and agrees:

1st. To deliver to the credit of lessor, free of cost, in the pipe line to which lessee may connect wells on said

land, the equal one-eighth part of all oil produced and saved from the leased premises.

2nd. To pay lessor one-eighth (1/8) of the gross proceeds each year, payable quarterly for the gas from each well where gas only is found, while the same is being used off the premises and if used in the manufacture of gasoline a royalty of one-eighth (1/8) payable monthly at the prevailing market rate for gas; and lessor to have gas free of cost from any such well for all stoves and all inside lights in the principal dwelling on said land during the same time, by making lessor's own connections with the well at lessor's own risk and expense.

3rd. To pay lessor for gas produced from any oil well and used off the premises or in the manufacture of gasoline or any other product a royalty of one-eighth (1/8) of the proceeds, at the mouth of the well, payable monthly at the prevailing market rate.

If no well be commenced on said land on or before the 12th day of February, 1937, this lease shall terminate as to both parties, unless the lessee shall on or before that date pay or tender to the lessor or to the lessors credit in the The Security Bank at Ponca City, Okla., or its successors, which shall continue as the depository regardless of changes in the ownership of said land, the sum of One hundred sixty & No/100 Dollars which shall operate as a rental and cover the privilege of deferring the commencement of a well for twelve months from said date. The payment herein referred to may be made in currency, draft or check at the option of the lessee; and the depositing of such currency, draft or check in any post office, with sufficient postage and properly addressed to the lessor, or said bank, on or before said last mentioned date, shall be deemed payment as herein provided. In like manner and upon like payments or tenders, the commencement of a well may be further deferred for like periods of the same number of months successively.

And it is understood and agreed that the consideration first recited herein, the down payment, covers, not only the privilege granted to the date when said first rental is

payable as aforesaid, but also the lessee's option of extending that period as aforesaid, and any and all other rights conferred.

Should the first well drilled on the above described land be a dry hole, then and in that event, if a second well is not commenced on said land within twelve months from the expiration of the last rental period for which rental has been paid, this lease shall terminate as to both parties, unless the lessee on or before the expiration of said twelve months shall resume the payment of rentals, in the same amount and in the same manner as hereinbefore provided. And it is agreed that upon the resumption of the payment of rentals as above provided, that the last preceding paragraph hereof governing the payment of rentals and the effect thereof, shall continue in force just as though there had been no interruption in the rental payments, and if the lessee shall commence to drill a well within the terms of this lease ~~or~~ any extension thereof, the lessee shall have the right to drill such well to completion with reasonable diligence and dispatch, and if oil or gas, or either of them, be found in paying quantities, this lease shall continue and be in force with like effect as if such well had been completed within the term of years first mentioned.

If said lessor owns a less interest in the above described land than the entire and undivided fee simple estate therein, then the royalties and rentals herein provided for shall be paid the said lessor only in the proportion which lessor's interest bears to the whole and undivided fee.

Lessee shall have the right to use, free of cost, gas, oil and water produced on said land for lessee's operations thereon, except water from the wells of lessor.

When requested by lessor, lessee shall bury lessee's pipe lines below plow depth.

No well shall be drilled nearer than 200 feet to the house or barn now on said premises without written consent of lessor.

Lessee shall pay for damages caused by lessee's operations to growing crops on said land.

Lessee shall have the right at any time to remove all

machinery and fixtures placed on said premises, including the right to draw and remove casing.

If the estate of either party hereto is assigned and the privilege of assigning in whole or in part is expressly allowed, the covenants hereof shall extend to their heirs, executors, administrators, successors or assigns, but no change in the ownership of the land or assignments of rental or royalties shall be binding on the lessee until after the lessee has been furnished with a written transfer or assignment or a true copy thereof and it is hereby agreed that in the event this lease shall be assigned as to a part or as to parts of the above described lands and the assignee or assignees of such part or parts shall fail or make default in the payment of the proportionate part of the rents due from him or them, such default shall not operate to defeat or affect this lease in so far as it covers a part or parts of said lands, upon which the said lessee or any assignee thereof shall make due payment of said rental, and this lease shall never be forfeited for non-payment of any rental due until after at least ten days written notice by registered mail or in person shall have been given the lessee.

Lessor hereby warrants and agrees to defend the title to the lands herein described and agrees that the lessee shall have the right at any time to redeem for lessor, by payment, any mortgages, taxes or other liens on the above described lands, in the event of default of payment by lessor, and be subrogated to the rights of the holder thereof, and the undersigned, lessors, for themselves and their heirs, successors, and assigns, hereby surrender and release all right of dower and homestead in the premises described herein, insofar as said right of dower and homestead may in any way affect the purposes for which this lease is made as recited herein.

In Testimony Whereof We Sign, this the 12th day of February, 1936.

HELEN CATHERINE JACKSON (s)
CLIFFORD JACKSON (s)
PAUL STERBA (s)
GERTRUDE K. STERBA (s)

STATE OF OKLAHOMA,
County of Canadian, SS:

Be it remembered, That on this 12th day of February A. D. 1936, before me, a Notary Public in and for said County and State, personally appeared Helen Catherine Jackson, nee Sterba, and Clifford Jackson, her husband, to me known to be the identical persons described in and who executed the within and foregoing instrument and acknowledged to me that they executed the same as their free and voluntary act and deed for the uses and purposes therein set forth.

In witness whereof, I have hereunto set my official signature and affixed my notarial seal, the day and year first above written.

(SEAL) H. C. KIMNER, *Notary Public.*

My commission expires January 2nd, 1938.

STATE OF OKLAHOMA,
County of Kay, SS:

Before me, the undersigned, a Notary Public within and for said County and State on this 13 day of February, 1936, personally appeared Paul Sterba and wife, Gertrude K. Sterba, to me known to be the identical persons who executed the within and foregoing instrument and acknowledged to me that they executed the same as their free and voluntary act and deed for the uses and purposes therein set forth.

In testimony whereof I have hereunto set my hand and official seal the day and year last above written.

(SEAL) J. R. MEET, *Notary Public.*

My commission expires Feb. 14, 1936.

APPENDICES "G" and "H"

APPLICATION TO ASSUME ORIGINAL JURISDICTION

and

PETITION FOR WRIT OF PROHIBITION OR OTHER PROPER RELIEF

IN THE SUPREME COURT OF THE STATE OF OKLAHOMA

No. ———

PAUL STERBA AND PAUL STERBA JR., A MINOR, BY AND THROUGH HIS FATHER AND NEXT FRIEND, PAUL STERBA, AND THE PALMER OIL CORPORATION, A CORPORATON,

Petitioners,

vs.

CORPORATION COMMISSION OF OKLAHOMA, CONSISTING OF REFORD BOND, RAY O. WEEMS AND RAY C. JONES; PHILLIPS PETROLEUM COMPANY, A CORPORATION; AMERADA PETROLEUM CORPORATION, A CORPORATION; ANDERSON-PRICHARD OIL CORPORATION, A CORPORATION; RAY STEPHENS, INC., A CORPORATION; STEPHENS PETROLEUM COMPANY, A CORPORATION; GULF OIL CORPORATION, A CORPORATION; MAGNOLIA PETROLEUM COMPANY, A CORPORATION; CITIES SERVICE OIL COMPANY, A CORPORATION; FOSTER PETROLEUM CORPORATION, A CORPORATION; AND SUNRAY OIL CORPORATION, A CORPORATION,

Defendants.

APPLICATON TO ASSUME ORIGINAL JURISDICTION

Come now, Paul Sterba and Paul Sterba, Jr., a minor, by and through his father and next friend, Paul Sterba, and The Palmer Oil Corporation, and respectfully pray

this Court to assume jurisdiction in an original proceeding under the petition for a Writ of Prohibition and other proper relief, copy of which petition is attached hereto, for the following reasons:

First: That the relief sought is against the Corporation Commission of the State of Oklahoma, and other defendants above named, who are acting as a "Unit Committee" under the jurisdiction of said Commission, to prevent and prohibit the enforcement of the Commission's Order No. 20289, which purported to create the "West Cement Medrano Unit" of the West Cement Field of Caddo County, Oklahoma, pursuant to House Bill No. 339 of the 1945 Oklahoma Legislature (O. S. Supp. 1947, Title 52, Sec. 286.1 to 286.17).

Second: That the action of the "Commission" and the "Unit Committee" is without authority of law and has been and will continue to be acts of judicial nature which are excessive, arbitrary and unreasonable, and that the applicants herein have suffered and will continue to suffer irreparable injury and damages.

Third: That the questions involved in said petition are of great public interest and that applicants have no speedy or adequate remedy in the State Court, Federal Court, or before the Commission to prevent their irreparable injury and damage.

Brief in support of this application and the petition referred to are filed herewith.

CLAUDE MONNET,
COLEMAN H. HAYES,
MART BROWN,
MARK H. ADAMS,
CHARLES E. JONES,
WILLIAM I. ROBINSON,
By .....
Attorneys for petitioners.

Address of attorneys: Claude Monnet, Coleman H. Hayes, Mart Brown, 1719 First National Bank Building, Oklahoma City, Oklahoma; Mark H. Adams, Charles E.

Jones, William I. Robinson, 1008 Brown Building, Wichita, Kansas.

IN THE SUPREME COURT OF THE STATE OF OKLAHOMA

No. ———

PAUL STERBA AND PAUL STERBA, JR., A MINOR, BY AND THROUGH HIS FATHER AND NEXT FRIEND, PAUL STERBA, AND THE PALMER OIL CORPORATION, A CORPORATON,

Petitioners,

vs.

CORPORATION COMMISSION OF OKLAHOMA, CONSISTING OF REFORD BOND, RAY O. WEEMS AND RAY C. JONES; PHILLIPS PETROLEUM COMPANY, A CORPORATION; AMERADA PETROLEUM CORPORATION, A CORPORATION; ANDERSON-PRICHARD OIL CORPORATION, A CORPORATION; RAY STEPHENS, INC., A CORPORATION; STEPHENS PETROLEUM COMPANY, A CORPORATION; GULF OIL CORPORATION, A CORPORATION; MAGNOLIA PETROLEUM COMPANY, A CORPORATION; CITIES SERVICE OIL COMPANY, A CORPORATION; FOSTER PETROLEUM CORPORATION, A CORPORATION; AND SUNRAY OIL CORPORATION, A CORPORATION,

Defendants.

PETITION FOR WRIT OF PROHIBITION OR OTHER PROPER RELIEF

Come now Paul Sterba, Paul Sterba, Jr., a minor by and through his father and next friend, Paul Sterba, and The Palmer Oil Corporation, petitioners herein, and respectfully represent and show to this Honorable Court as follows:

First: That your petitioners, Paul Sterba and Paul Sterba, Jr., a minor, are residents of Ponca City, Kay County, Oklahoma, and will hereinafter be referred to as "Sterbas"; that petitioner, The Palmer Oil Corporation, is a corporation duly organized and existing under the laws of the State of Kansas and licensed to transact busi-

ness within the State of Oklahoma and will be hereinafter referred to as "Palmer".

That the defendants, Reford Bond, Ray O. Weems and Ray C. Jones are the duly elected, qualified and acting Commissioners of the Corporation Commission of Oklahoma and as such constitute and will be hereinafter referred to as the "Commission". That the defendants, Phillips Petroleum Company, Amerada Petroleum Corporation, Ray Stephens, Inc., Stephens Petroleum Company, Cities Service Oil Company, Sunray Oil Corporation and Foster Petroleum Corporation are each corporations duly organized and existing under and by virtue of the laws of the State of Delaware and are each duly licensed to transact business within the State of Oklahoma; that the defendant, Anderson-Prichard Oil Corporation is duly organized and existing under and by virtue of the laws of the State of Delaware and the State of Oklahoma and is licensed to transact business within the State of Oklahoma; that the defendant, Gulf Oil Corporation, is duly organized and existing under and by virtue of the laws of the State of Pennsylvania and is duly licensed to transact business within the State of Oklahoma; that the defendant, Magnolia Petroleum Company, is duly organized and existing under and by virtue of the laws of the State of Texas and is duly licensed to transact business within the State of Oklahoma; that the name and address of the resident agents of said defendant corporations are as follows:

Phillips Petroleum Company, Bruce McClelland, Jr., Hightower Building, Oklahoma City, Oklahoma.

Amerada Petroleum Corporation, George M. Green, 735 First National Bldg., Oklahoma City, Oklahoma.

Anderson-Prichard Oil Corporation, T. H. Marshall, 1000 Apco Tower, Oklahoma City, Oklahoma.

Ray Stephens, Inc., H. G. Stephens, 2600 Apco Tower, Oklahoma City, Oklahoma.

Stephens Petroleum Company, Waldo E. Stephens, 2600 Apco Tower, Oklahoma City, Oklahoma.

Gulf Oil Corporation, Katherine Manton, 1517 N. W. 20th, Oklahoma City, Oklahoma.

Magnolia Petroleum Company, W. R. Wallace, 7th and Broadway, Oklahoma City, Oklahoma.

Cities Service Oil Company, B. A. Ames, First National Building, Oklahoma City, Oklahoma.

Foster Petroleum Corporation, Katherine Manton, 1517 N. W. 20th, Oklahoma City, Oklahoma.

Sunray Oil Corporation, Edward Howell, 2420 First National Bldg., Oklahoma City, Oklahoma.

That said defendant corporations above named comprise the purported operating committee of the so-called West Cement Medrano Unit as purportedly created and established by the Commission under and by virtue of its order No. 20289 entered September 5, 1947, and that said corporations so comprising said committee will be hereinafter referred to as "Committee".

Second: That "Sterbas," petitioners herein, are the owners as tenants in common, Paul Sterba owning an undivided ¾ths interest and Paul Sterba, Jr., a minor, owning an undivided ¼th interest, of the following described real estate in Caddo County, Oklahoma:

> The Southwest Quarter (SW¼) of Section Thirty-five (35), Township Six (6) North, Range Ten (10) West.

That heretofore and on or about February 12, 1936, the then owners of the above described real estate, Paul Sterba and his wife, Gertrude K. Sterba, and his sister, Helen Sterba Jackson, and her husband, Clifford Jackson, made, executed and delivered, as lessors, to Chris Pearson, as lessee, an oil and gas lease covering said real estate, said lease being recorded in Book 75, page 316, in the Office of the County Clerk of said County and State, which by reference thereto is made a part hereof; that among other terms and provisions of said oil and gas lease, the lessee therein or his assigns therein covenanted to deliver to the credit of the lessors, free of cost, in the pipe line to which the lessee may connect wells on said land, the equal one-eighth part of all oil produced and saved from said leased premises. Said lessee and his assigns further covenanted

to pay to lessors one-eighth of the gross proceeds of gas produced at the prevailing market rate for gas.

That thereafter, and on or about the 15th day of February, 1936, said Chris Pearson transferred all of his interest in and to said oil and gas lease to defendant, Gulf Oil Corporation, which assignment is recorded in Book 75 Misc., page 319, in the Office of the County Clerk in said County and State, which by reference thereto is made a part hereof.

Third: That on or about the 6th day of September, 1938, the Gulf Oil Corporation entered into written contract with "Palmer" under the terms of which Gulf Oil Corporation agreed to assign to "Palmer" all of its interest in and to said oil and gas lease to a depth of 6000 feet provided "Palmer" would within thirty (30) days commence drilling operations for a test well in the Northeast Quarter (NE¼) of the Northeast Quarter (NE¼) of said Southwest Quarter(SW¼) of said Section Thirty-five (35), and with diligence and dispatch drill said well to a total depth of 6000 feet, unless oil, gas or either of them or igneous rock or other impenetrable substance was encountered at a lesser depth; that said contract is recorded in the Office of the County Clerk in said County and State in Book 83, page 379, and by reference made a part hereof.

Fourth: That "Palmer" duly performed all terms and conditions of said contract by drilling and completing an oil and gas test well as a commercial producer on or about October 13, 1938 at the location above designated, said well being known as the Palmer-Sterba No. 1 well and being completed in what is commonly known as the Niles Sand at a total depth of 3545 feet.

That on December 6, 1938 Gulf Oil Corporation assigned and set over unto "Palmer" the aforedescribed oil and gas lease to a depth of 6000 feet, all as provided in said contract of assignment, said assignment being filed in the Office of the County Clerk and recorded in Book 84, page 214, Caddo County, Oklahoma, and by reference thereto is made a part hereof.

Fifth: That thereafter and on the 5th day of May, 1939,

"Palmer" drilled and completed a Palmer-Sterba Well-No. 2 at a location in the Northeast Quarter of the Northwest Quarter of the Northwest Quarter of the Southwest Quarter of said Section Thirty-five, which well is producing from the Rowe Sand at a total depth of 3401 feet; that thereafter and on the 31st day of October, 1940, "Palmer" drilled and completed as a producer of gas in commercial quantities Palmer-Sterba No. 3 well at a location in the Northwest Quarter of the Northwest Quarter of the Southwest Quarter of said Section Thirty-five, from what is commonly known as the Medrano Sand at a total depth of 5260 feet; that thereafter and on or about the 5th day of June, 1943, "Palmer" drilled and completed as a producer of oil in commercial quantities Palmer-Sterba Well No. 4, at a location in the Southeast Quarter of the Southeast Quarter of the Southwest Quarter of said Section Thirty-five, from what is commonly known as the Medrano Sand at a total depth of 5995 feet; that thereafter and on or about the 14th day of August, 1943, "Palmer" drilled and completed, as Palmer-Sterba No. 5, a well at a location in the Southeast Quarter of the Northeast Quarter of the Southwest Quarter of said Section Thirty-five, which well was drilled to a depth of 6000 feet, sufficient to test what is commonly known as the Medrano Sand, but by reason of a fault there existing such sand was found absent, but that said well was completed as a commercial producer in what is commonly known as the Marchand Sand; that thereafter and on or about the 17th day of November, 1943, "Palmer" drilled and completed as a dry hole Palmer-Sterba No. 6 well at a location in the Northeast Quarter of the Southwest Quarter of said Southwest Quarter of Section Thirty-five which well, in cooperation with Gulf Oil Corporation, was drilled to a depth of 6425 feet, sufficient to test what is commonly known as the Medrano Sand, but by reason of a fault there existing such sand was found absent; that thereafter and on or about the 21st day of March, 1947, "Palmer" drilled and completed as a commercial producer of oil Palmer-Sterba No. 7 well at a location in the Northeast Quarter

of the Southwest Quarter of the Southwest Quarter of said Section Thirty-five, which well is producing from what is commonly known as the Medrano Sand at a total depth of 5992 feet; that the drilling and development operations of "Palmer" were performed in a good and workmanlike manner and under the rules and regulations of the "Commission" in compliance with the implied covenants of said oil and gas lease and at all times "Palmer" paid to "Sterbas" their 1/8th of the proceeds of oil or gas produced, as provided under the terms and provisions of said lease.

Sixth: That on or about the 19th day of April, 1945, the Legislature of the State of Oklahoma enacted a statute providing for the unitized management of common sources of supply of oil and gas, which law was designated as House Bill No. 339 of the 1945 Legislature of the State of Oklahoma and became effective as a law July 25, 1945, and is set forth in O. S. Supp. 1947, Title 52, Sec. 286.1 to 286.17, both inclusive; that the terms and provisions of said statute purported to establish a radical departure from the rules of property and property rights that had heretofore existed in the State of Oklahoma in respect to the drilling and development of common sources of supply of oil or gas; that said statute by its own terms provided: (Sec. 286.2)

> "Provided this Act shall not apply to any field where the discovery well has been drilled (20) years prior to the effective date of this Act."

Seventh: That on or about October 27, 1946, the defendants, Phillips Petroleum Company, Amerada Petroleum Corporation, Anderson-Prichard Oil Corporation, Ray Stephens, Inc., Stephens Petroleum Company and Magnolia Petroleum Company, as petitioners, filed their petition with the Corporation Commission of the State of Oklahoma for an order creating the "West Cement Medrano Unit" having for its purpose the unitized management, operation and further development of the entire Medrano Sand of the West Cement Field of Caddo County,

Oklahoma, including the premises owned by "Sterbas" as above described and the leaseholds thereon held by "Palmer" and Gulf Oil Corporation; that Gulf Oil Corporation has completed no producing well upon the premises and that "Sterbas" relied upon "Palmer" as their lessee and operator of all the producing wells upon their premises to fully protect their interests in said proceedings before the "Commission".

Eighth: That the proceedings before the "Commission" to establish such West Cement Medrano Unit were designated as Cause C.D.1308 and that various hearings were had therein beginning on or about the 9th day of December, 1946, and terminating on or about July 29, 1947; that under the plan of unitization originally proposed by the petitioners therein there was allocated to "Sterbas'" property as their interest in the total unit the percentage of 7.683, which percentage was divided between the leaseholds thereon as follows:

Palmer (above 6000')	5.145
Gulf Oil Corporation (below 6000')	2.538

and that the proposed plan of unitization and the unit area designated thereby was agreed upon in writing by all of the members of the "Committee", defendants herein, including Gulf Oil Corporation.

Ninth: That "Palmer" as lessee of "Sterbas'" premises duly filed its answer and protest to the petition filed in said proceedings C.D.1308 before the "Commission" and claimed in the hearings before said "Commission" that said statute under which petitioners sought to establish said unit was unconstitutional, constituting a deprivation of property without due process of law, impairment of the obligation of contract, unlawful delegation of power and a taking of property without compensation—all in violation of the Constitution of the United States and the Constitution of the State of Oklahoma; that the proposed plan of unitization did not allocate to "Sterbas'" property and particularly to "Palmer's" leasehold thereon, a fair percent of the unit production; that the plan was otherwise inequitable and unjust; that the Medrano Sand

of the West Cement Field did not constitute a single common source of supply; that the plan made no provision for adjustment of equities or property rights as might be reflected by subsequent development; that the discovery well in the West Cement Field was drilled more than twenty (20) years prior to the effective date of the statute; and that the facts were otherwise insufficient to justify the establishment of unitized management and operation.

Tenth: That petitioners amended the proposed plan of unitization by allocating to "Sterbas'" premises a total unit percent of 7.67202, which was divided between the leaseholds thereon as follows:

Palmer (above 6000')	5.51614
Gulf Oil Corporation (below 6000')	2.15688;

that the percent above mentioned was allowed to Gulf Oil Corporation irrespective of the fact that no producing well was drilled on said "Sterbas'" premises to a depth greater than 6000 feet and that in the allocation of said percentage "Palmer" was given no consideration by the "Commission" on its contention of certain ownership and drainage rights below 6000 feet.

That on the 5th day of September, 1947, the "Commission" entered its order No. 20289 in Cause No. C.D.1308, establishing the West Cement Medrano Unit exactly in accordance with the amended plan of unitization proposed by said petitioners, a copy of said order being attached hereto, marked Exhibit "A", and by reference made a part hereof; that said order included within the West Cement Medrano Unit the property owned by "Sterbas" and various other properties all as shown by the hatched lines on the plat attached to Exhibit "A".

Eleventh: That said order No. 20289 entered by the "Commission" was illegal, invalid and void on its face because

First: The order shows on its face that the discovery well in the West Cement Field was drilled more than 20 years prior to the effective date of the statute and therefore the law could not be applied.

Second: The law and order on its face shows that it is unconstitutional under both the Constitution of the State of Oklahoma and the Constitution of the United States.

Twelfth: That the discovery oil and gas well in the West Cement Field of Caddo County, Oklahoma, was the Fortuna Company well drilled and completed at a location in the Southwest Quarter of Section Thirty-one, Township Six North, Range Nine West, on or about October 17, 1917; that despite such undisputed fact the "Commission" undertook to exercise arbitrary and excessive judicial power by applying the unitization statute above referred to to the West Cement Field of Caddo County, Oklahoma; that the "Commission" without legal authority sought to avoid the effect of the provision contained in Sec. 286.2 of said statute above referred to by making the following finding:

> "That the West Cement Medrano Pool is a field within the meaning of that term as used in the second paragraph of Section 2 of H. B. 339 of the 1945 Oklahoma Legislature; that the term 'field' in ordinary usage has no fixed or definite meaning but is sometimes used to refer to the general area where a number of oil or gas formations are found and at other times used to refer to a particular common source of supply or pool; that as used by the Legislature aforesaid, the term was intended to relate to the particular common source of supply or pool sought to be unitized under the act and not to any general area which in a broader sense could be termed a field; that in effect said act relates to and deals only with single common sources of supply of oil and gas."

That the "Commission" failed to consider or comment upon the constitutional questions raised and presented to it with respect to the validity of the statute under which it ordered the establishment of the West Cement Medrano Unit.

That all of the evidence introduced in Cause No. C.D.1308 showed that the Medrano Sand bodies of the West Cement Field constituted two or more distinct common sources of

supply as a result of geological faults of sufficient magnitude and extent to completely separate the sand bodies of the said Medrano Sand lying on either side of such faults. That despite such facts the "Commission" in violation of the statute itself, which is applicable only to single common sources of supply, applied such statute and ordered a unitization of the several separate bodies of Medrano Sand of the West Cement Field.

Thirteenth: That "Palmer" duly appealed to the Supreme Court of the State of Oklahoma from "Commission's" order numbered 20289 and filed with the "Commission" an application for the fixing of supersedeas bond for the purpose of staying said order of the "Commission" pending final determination thereof by the Supreme Court of the State of Oklahoma; that the "Commission" on the 3rd day of October, 1947, fixed the amount of supersedeas bond in the sum of $250,000.00, which was unreasonable, arbitrary and excessive and "Palmer" failed to make bond in said amount, but perfected said appeal on or about October 18, 1947, without bond, and the same is now pending before the Supreme Court of the State of Oklahoma as Case No. 33336; and that "Palmer" has duly filed in said appeal its brief and is awaiting the filing of briefs by the "Committee" or its members, and the final hearing thereof by the Court; that all matters presented in said appeal are by reference made a part hereof.

Fourteenth: That on December 1, 1947, the "Sterbas" and "Palmer" involuntarily relinquished to defendant Phillips Petroleum Company, as Unit Operator under the supervision of the "Committee" and under the authority and approval of the "Commission", possession, control and operation of the Medrano Sand in and under "Sterbas'" premises and "Palmer's" leasehold, all as above described; that at all times since December 1, 1947, said "Committee" and the "Commission" have withheld said property from "Sterbas" and "Palmer" and have exercised and have threatened to continue to exercise unreasonable, excessive and arbitrary judicial power in the operation and development of said property; that at all times

since December 1, 1947, the "Committee" and the "Commission" have operated and developed said property as several common sources of supply and threaten to continue to do so.

Fifteenth: That "Sterbas" and "Palmer" as the result of the operations of the "Committee" as authorized by the "Commission" and the threatened continued operations have suffered and will suffer irreparable and permanent damages and that "Sterbas" and "Palmer" will be faced with a multiplicity of suits of a prolonged and extensive nature if the "Committee" and the "Commission" are not restrained and prohibited from further operating their property.

Sixteenth: That during the period of December, 1947, January and February, 1948, the "Committee" with the authority and approval of the "Commission" produced from "Sterbas'" and "Palmer's" property the total of 51,817 barrels of oil, which amount constituted for said period 11.3% of the total oil produced by the "Committee" under the authority of the "Commission" from the entire unit, the total unit production being 453,245 barrels of oil; that under the terms of the oil and gas lease existing between "Sterbas" and "Palmer"—assuming a price of $2.50 per barrel for oil—"Sterbas" would have been entitled to a royalty of approximately $16,000.00 for said three months' period and "Palmer" would have been entitled to an amount in excess of $100,000.00 on the oil and gas produced and sold; that under the percent allocated to "Sterbas'" property of the total unit production—assuming a price of $2.50 per barrel for oil—"Sterbas" would be entitled to a royalty for said three months' period of approximately $11,000.00 and "Palmer" would be entitled to a sum of approximately $60,000.00; that the deficiency in the amount payable to "Sterbas" under the terms of the oil and gas lease in the approximate sum of $5,000.00 has been or will be paid by the "Committee" with the authority and approval of the "Commission" to various of the "Committee" members and other parties within the unit and that "Sterbas" will be unable to re-

cover the same without prolonged and expensive litigation involving many parties and many suits; that the deficiency in the amount payable to "Palmer" under the terms of its oil and gas lease during said period of a sum in excess of $40,000.00 has been or will be paid by the "Committee" with the authority and approval of the "Commission" to various of the "Committee" members and other parties within the unit and cannot be recovered by "Palmer" without prolonged and expensive litigation involving many parties and many suits; that petitioners are informed and believe that the "Committee" with the approval and authority of the "Commission" is continuing the same manner of operation of petitioners' property as those described during the period as aforesaid and will continue such operations indefinitely unless prohibited or restrained by this Court.

Seventeenth: That Petitioners have no speedy or adequate remedy except by an original action in this Court; the petitioners have no way of knowing the length of time required before the appeal in Case No. 33336 will be heard or whether the legal questions raised in said appeal can be properly determined in such appeal; that no actions or proceedings which petitioners could bring either in a State or Federal District Court or before the "Commission" could adequately provide a remedy to petitioners or prevent the continuing injury and damage which they are suffering each day; that the statute involved in this matter establishes a new property law in this state which has been applied by the "Commission" retroactively to the vested rights of petitioners; that the question of the validity of said statute is of great public interest, and, if valid, the interpretation and effect of such statute is likewise of great public interest; that this Court has broad powers in its original jurisdiction to issue writs of prohibition and to exercise superintending control over inferior tribunals.

Wherefore, petitioners pray that this Court take original jurisdiction and issue its alternative writ of prohibition directed to the members of the "Commission" and the

members of the "Committee" prohibiting them from enforcement of the "Commission's" order No. 20289 pending the final disposition hereof, and to set a day certain on which said writ shall be returnable on which the "Commission" and the "Committee" and the various members thereof shall be required to appear and show cause why such writ should not be made permanent, and for such other and further relief as to the Court may seem proper in the premises.

Respectfully submitted,

CLAUDE MONNET,
COLEMAN H. HAYES,
MART BROWN,
MARK H. ADAMS,
CHARLES E. JONES,
WILLIAM I. ROBINSON,
By _____

Address of attorneys: Claude Monnet, Coleman H. Hayes, Mart Brown, 1719 First National Bank Building, Oklahoma City, Oklahoma; Mark H. Adams, Charles E. Jones, William I. Robinson, 1008 Brown Building, Wichita, Kansas.

AFFIDAVIT

STATE OF _____
: County of _____, ss:

Tom Palmer of lawful age, being duly sworn upon oath, deposes and states:

That he is President of The Palmer Oil Corporation, one of the petitioners in the above and foregoing petition; that he has read said petition and understands the contents thereof and that the statements, allegations and averments therein set forth are true and correct.

TOM PALMER.

Subscribed and sworn to before me this _____ day of _____, 1948.

_____
Notary Public.

My commission expires: _____

BEFORE THE CORPORATION COMMMISSION OF THE STATE OF OKLAHOMA

Cause CD No. 1308

Order No. 20289

IN THE MATTER OF THE PETITION FOR THE CREATION OF THE WEST CEMENT MEDRANO UNIT HAVING FOR ITS PURPOSE THE UNITIZED MANAGEMENT, OPERATION AND FURTHER DEVELOPMENT OF THE WEST CEMENT MEDRANO COMMON SOURCE OF SUPPLY OF OIL AND GAS IN CADDO COUNTY, OKLAHOMA, THE DEFINING OF THE UNIT AREA THEREOF AND THE PRESCRIBING OF THE PLAN OF UNITIZATION APPLICABLE TO SUCH UNIT AND UNIT AREA

REPORT AND ORDER OF THE COMMISSION

The above styled and numbered cause is a proceeding brought by the lessees of a substantial majority of the acreage in the West Cement Medrano oil and gas pool or field located in Caddo County, Oklahoma, seeking to unitize the management, operation and further development of said field for the purpose of preventing the waste of oil and gas and of substantially increasing the ultimate recovery of oil therefrom, all as authorized and provided for in H. R. 339 of the 1945 Oklahoma Legislature. The bringing of this proceeding followed months of cooperative study of the field and of the benefits of unitization engaged in by substantially all of the operating lessees in the pool and in which all were invited to participate. The original petition herein, attached to which was a recommended Plan of Unitization applicable to said field, was filed October 23, 1946.

Pursuant to order of the Commission, said petition was first set for hearing November 7, 1946, at 10:00 o'clock, A. M. in the Commission Courtroom in the State Capitol Office Building at Oklahoma City, Oklahoma, and notice thereof published once a week for two consecutive weeks in a newspaper of general circulation in Caddo County,

in which West Cement Medrano field is located, and for the same time in a newspaper of general circulation in Oklahoma County, Oklahoma.

At the time and place so fixed for said hearing, a large number of persons were present, not only lessees but also land owners, royalty owners and other persons having varying interests in the West Cement Medrano Field. A group of lessors and royalty owners, represented by their attorney, Reford Bond, Jr., advised the Commission that they had not had sufficient time within which to study the proposed Plan of Unitization and requested a continuance of the hearing. The granting of the continuance was agreed to by the petitioners who, through their attorneys, publicly announced that during the period of the continuance they stood ready and willing, upon request, to furnish any party in interest any factual data pertaining to the West Cement Medrano field and the proposed Plan of Unitization available to petitioners. At the same time Magnolia Petroleum Company, an operating lessee in the field, asked leave to sign the petition as one of the petitioners thereto. Whereupon, the Commission continued said hearing to December 9, 1946, at 10:00 o'clock A. M. at the same place, permitted the Magnolia Petroleum Company to sign the petition as one of the petitioners, directed that the petition be refiled and ordered that notice of the refiling of the petition and of the date to which said hearing was continued be published in the same manner and for the same time as was the first notice of hearing, all of which was done.

In advance of said original hearing date, as is its usual custom in oil and gas matters, the Commission mailed mimeographed copies of the petition, together with information as to the time of hearing, to all persons on its established mailing list, which includes all operating lessees within the West Cement Medrano field as well as a number of royalty and other interest owners.

The hearing of said cause was commenced at the time and place so fixed, namely, December 9, 1946, at 10:00 o'clock A. M., in the Commission Courtroom in the Capi-

tol Office Building in Oklahoma City, Oklahoma, and continued at the same place throughout all of the following days, to wit: December 9 and 23, 1946; January 6 and 7; February 25, 26, 27 and 28; May 13, 14, 15, 16, 20, 21, 22 and 23; July 15, 16, 17, 18, 22, 23, 24 and 25; all in 1947, except for said first mentioned dates in 1946. The continuance of said hearing from time to time was by proper orders of continuance. At said hearing the petitioners and subscribers to the proposed Plan of Unitization were represented by the following named attorneys: W. H. Brown, Russell G. Lowe, Booth Kellough, W. R. Wallace and R. M. Williams. The protestant, the Palmer Oil Corporation appeared by its attorneys, Mark H. Adams and Charles Jones, of Wichita, Kansas. Protestants Tom Potter, Clyde Kahle, Maud Kahle, Bob White Oil and Gas Company and a group of approximately 65 lessors and royalty owners appeared by their attorney, Reford Bond, Jr. The protestants B. E. Johnson, Virginia McIntyre and M. L. McIntyre appeared by their attorney, Jack Page. A number of royalty and other interest owners wrote letters to the Commission urging the granting of the petition, all of which appear in the record. Other royalty owners and various parties in interest were present at the hearing from time to time but took no part.

At the hearing everyone who desired to do so, regardless of the interest of such person, was given full opportunity to offer any and all competent evidence that any such person chose to offer, either for or against the recommended Plan of Unitization or by way of amendment thereto, and to otherwise be heard in regard thereto. The evidence so introduced consisted of exfensive geological, engineering and other proof concerning the history, discovery, development, operation and present condition of the West Cement Medrano field and the probable results obtainable both under present competitive methods of operation and through the unitization thereof; proof both pro and con as to the fairness, reasonableness and equitableness of the recommended Plan of Unitization; and

proof by protestants with respect to certain amendments which they claim should be made in said Plan.

In addition to the knowledge gained from the evidence introduced at said hearing, the Commission has had, over a period of time, a general knowledge of the West Cement Medrano field and of conditions existing therein gained through the exercise by it of its jurisdiction over such field under the Conservation Laws of the State of Oklahoma, dating from the discovery thereof. As a result of the evidence, statements and arguments introduced and made in the hearing here under consideration, and by reason of its general knowledge of said West Cement Medrano field, as aforesaid, the Commission is of the opinion that it has sufficient knowledge and information upon which to base a proper order in this cause.

In addition to the proceedings and notices aforesaid, further mention is here made of the fact that during the course of said hearing, The Palmer Oil Corporation drilled and completed an additional well on a lease owned by it in the aforesaid field, necessitating a relatively slight change in the percentage of interests of the several separately owned tracts in the field shown in "Exhibit B" attached to the recommended Plan of Unitization, and also necessitating the inclusion of such additional well in "Exhibit D" attached to said Plan of Unitization. Also as a result of the time consumed by the hearing, it was considered desirable by the petitioners and subscribers to the recommended Plan of Unitization to strike from Section XXVII of said Plan the time limitation therein contained. To accomplish the aforesaid objectives, the petitioners during the course of the hearing asked and without objection were granted leave to amend the petition accordingly. In order to permit persons not present at the hearing an additional opportunity to be heard with respect to said amendment, the Commission set the petition as amended for further hearing on July 29, 1947, at 10:00 o'clock A. M., in the Commission Courtroom in the State Capitol Office Building at Oklahoma City, Oklahoma, and caused notice of the amendment to said petition and of

the hearing thereon to be published, ten (10) days prior to said hearing date, in a newspaper of general circulation in Oklahoma County, Oklahoma. At the time and place so named, the further hearing was had in said cause upon the petition as amended, no one appearing, however, in opposition thereto.

Now, on this 5th day of September, 1947, the Commission having previously taken said cause under advisement and having considered the matter in conference and each of the Commissioners being well and fully advised, the Commission makes the following findings of fact, conclusions of law, and enters the following order authorizing and approving the creation of the West Cement Medrano Unit, defining of the Unit area thereof and prescribing of the Plan of Unitization applicable to such Unit and Unit Area.

Findings of Fact and Conclusions of Law

The Commission finds:

1. That notice of the filing of the original petition, the refiling thereof after being signed by the Magnolia Petroleum Company, the filing of the amendment thereto and the time, place and purpose of the hearings on the petition, both as originally filed and as amended, was given in all respects as by law required, and that the Commission has jurisdiction of the subject matter of said petition and amended petition and of all persons interested therein, and has jurisdiction to make and promulgate the hereinafter prescribed order.

2. That the lands (hereinafter designated and referred to as the "Unit Area") located in Caddo County, Oklahoma and outlined by the hatched line on the map marked "Exhibit A" and attached to the Plan of Unitization attached to and made a part of this order, are underlaid with an oil and gas-bearing formation known as the Medrano sandstone found at a depth ranging from approximately 4500 feet along the North and Northeast side of the Unit Area and an approximate depth of 6241 feet along the South and Southwest side of the Unit Area; that a

gas cap exists along the high part of the producing formation from which the primary production is gas, whereas, the primary production from wells drilled lower on the structure is oil; that the average sand or formation thickness in the gas cap area or zone is approximately 65 feet; that the average sand or formation thickness in the oil area or zone is approximately 95 feet; that the said Medrano sandstone underlying said above described lands as aforesaid constitutes a single common source of supply of oil and gas, all parts of which are permeably connected so as to permit the migration of oil or gas or both from one portion of said common source of supply to anther wherever and whenever pressure differentials are created as a result of the production or operations for the production of oil or gas from said producing formation; that although faults are known to exist in parts of said common source of supply said faults do not prevent substantial migration of oil and gas and of pressures from one part of said common source of supply to another; that said common source of supply of oil and gas has heretofore been designated by the Commission and is generally known as the West Cement Medrano pool.

3. That said common source of supply of oil and gas was first discovered in October, 1936 by the drilling and completion of the Magnolia Petroleum Company's Medrano No. 6 gas well in the SE/4 of the NE/4 of the SW/4 of Section 36, Township 6 North, Range 10 West, Caddo County, Oklahoma; that the presence of oil in said common source of supply of oil and gas was first discovered in March, 1943 by the drilling and completion of the Stephens Petroleum Company's Pierson No. 1 oil well in the SE/4 of the SW/4 of the SE/4 of Section 35, Township 6 North, Range 9 West, Caddo County, Oklahoma; that at the present time there are 37 oil wells and 19 gas wells producing from said common source of supply of oil and gas.

4. That the outer boundaries of said common source of supply of oil and gas underlying and by this Order included within the aforesaid Unit Area have been reason-

ably defined by actual drilling operations, both by the drilling of wells within and the drilling of wells outside said Unit Area; that said Unit Area consists of approximately 3700 acres of land.

5. That the lands embraced within the aforesaid Unit Area are divided into a large number of individual tracts of varying size and shape, and owned in severalty by a large number of different individuals, firms and corporations owning varying interests therein, including oil and gas leasehold interests, royalty interests and various and sundry other rights and interests; that the several oil and gas leases covering said lands are owned by not less than 25 different lessees; that the royalty interests under said land are divided among and owned by several hundred royalty owners; that the petitioners in this cause are lessees of record of 73.32% of the area of the common source of supply sought to be unitized; that the subscribers to the recommended Plan of Unitization and other lessees favoring its adoption are lessees of record of approximately 94% of the area of said common source of supply; that the lessees appearing at the hearing and protesting the granting of the petition herein are lessees of approximately 4% of the proposed Unit Area; that the lessees of the remaining percentage of the Unit Area have not appeared for or against the granting of the petition herein.

6. That without the unitization of said West Cement Medrano common source of supply of oil and gas the only method whereby said pool can be feasibly and effectively operated and produced for the recovery of oil and gas therefrom is by and under individual competitive pressure depletion methods of operation, the methods now being used in the pool, that is to say, by treating each separately owned tract or lease as a separate unit for operating and production purposes and depending on the natural energy in the producing formation to move what oil and gas can be moved thereby out of the formation to the well bore where it can be produced; that the principal natural energy mechanism in said pool is gas in solution with the oil coupled with a gas cap expansion; that under present

competitive methods of operation, treating each tract or lease as a separate operating unit, there has been and still continues to be a disproportionate, inequitable and wasteful utilization and dissipation of the gas energy in the pool by certain tracts to the detriment and disadvantage of other tracts and to the injury of the pool as a whole; that by and under the best known competitive pressure depletion methods of operation not more than 25% or approximately 24 million barrels of the 97 million barrels of oil originally in place in the reservoir can be economically recovered, leaving the remaining 75%, or approximately 73 million barrels of oil in the ground unrecovered and unrecoverable except through and by means of unitization of the pool and the adoption of unitized methods of operation therein; that to permit the owners of gas wells and high gas-oil ratio wells to continue to produce such wells will result in robbing the oil wells of gas energy required to produce the oil; that to shut in the gas wells and the high gas-oil ratio wells without permitting the owners thereof to share in the oil and gas production from the oil wells, would deprive the owners of the gas wells of their fair share of the production from the pool; that the value of the recoverable oil exceeds many times the market value of the gas; that the return to the reservoir of the gas produced from the oil to supplement the remaining natural gas energy and retard the decline in reservoir pressure and perhaps the injection at some later date of water low on structure is desirable and necessary to obtain the greatest ultimate recovery of oil from the pool, but which cannot be done in the absence of unitization because of the migratory nature of the injected gas or water and the effect that the injection thereof into the reservoir would have upon properties in the pool other than the property on which the gas or water is injected and upon the pool as a whole.

7. That by and through the unitization of the proposed Unit Area and the Unitized management and operation and further development thereof as a unit, all as set out and provided for in the Plan of Unitization hereto attached,

full use can be made of the gas energy in the reservoir to the mutual advantage of all the owners of the said common source of supply of oil and gas, that waste of large volumes of oil and gas can be prevented, gas can and will be returned to the reservoir to supplement the natural reservoir energy, water encroachment, either natural or artificial, on the lower side of the pool can be properly controlled and utilized, substantially more oil, amounting to many millions of barrels, can be recovered from the common source of supply than can otherwise be recovered, a more equitable distribution of the recoverable oil and gas can be had as between the several owners of the pool and the correlative rights of the several owners can be more fully protected.

8. The unitization and unitized management and operation and further development of said common source of supply as a unit is reasonably necessary to effectively carry on the unitized methods of operation described in the proposed Plan of Unitization.

9. That any one or all of the unitized methods of operation described in the attached Plan of Unitization as applied to the common source of supply underlying and included within the Unit Area are feasible, will prevent waste, and will, with reasonable probability, result in the increased recovery of substantially more oil and gas from the common source of supply than would otherwise be recovered; that the estimated additional cost of conducting such operations will not exceed the value of the additional oil and gas so recovered; that such unitization and the adoption of any one or more of such unitized methods of operation is for the common good and will result in the general advantage to the owners of the oil and gas rights in and to the common source of supply thereby affected.

10. That neither said West Cement Medrano common source of supply of oil and gas nor any part or parts thereof were being operated by or under pressure maintenance, repressuring or secondary recovery methods of operation as of the effective date of H. B. 339 of the 1945 Oklahoma Legislature.

11. That the Plan of Unitization attached to this order and which is made a part hereof, is one suited to the needs and requirements of the West Cement Medrano Unit, the creation of which is hereby authorized and approved, taking into account all the facts and conditions found by the Commission to exist in respect thereto; that said Plan of Unitization is fair, reasonable and equitable and contains all the terms, provisions, conditions and requirements reasonably necessary and proper to protect, safeguard and adjust the respective rights and obligations of the several persons affected, including royalty owners, owners of overriding royalty interests, oil and gas payments, carried interests, mortgagees, lien claimants, and others, as well as the lessees and such as will effectuate and accomplish the purposes of H. B. 339 of the 1945 Oklahoma Legislature; that said Plan of Unitization provides for the efficient unitized management and control of the further development and operation of the Unit Area for the recovery of oil and gas from the common source of supply affected; that the division of interests set forth in "Exhibit B" attached to said Plan of Unitization pursuant to which the unit production is to be apportioned and allocated among and to the several separately owned tracts within the Unit Area is fair and equitable and is such as will reasonably permit persons otherwise entitled to share in or benefit by the production from such separately owned tracts to receive, in lieu thereof, their fair, equitable and reasonable share of the unit production or other benefits thereof; that the division of interest assigned to the several separately owned tracts in the Unit Area as set out in said "Exhibit B" to said Plan of Unitization is fair and reasonably representative of the value of said several tracts for oil and gas purposes and the contributing value thereof to the unit in relation to like values of other tracts in the unit; that the basis used to arrive at said division of interest takes into account the acreage of the several separately owned tracts, the quantity of oil and gas recoverable therefrom the location thereof on structure, the probable productivity of oil and gas from

such tracts in the absence of unitization, the burden of operation to which such tracts will or are likely to be subjected, together with all other pertinent engineering, geological and operating factors as are reasonably susceptible of determination; that the manner in which and the basis, terms and conditions on which the cost and expense of the further development and operation of the Unit Area shall be financed and apportioned among and assessed against the tracts and interests chargeable therewith are fair, reasonable and equitable; that the provisions of the said Plan with respect to taking over and using the wells, equipment and other properties of the several lessees within the Unit Area, including the method of arriving at the compensation therefor and otherwise proportionately equalizing and adjusting the investment of the several lessees in the project as of the effective date of the unit operations are fair, reasonable and equitable; that the provisions of said Plan with respect to the creation of an operating committee and the powers and duties of such committee are fair, reasonable and equitable.

12. That the Plan of Unitization hereto attached in all respects conforms to and complies with the requirements of H. B. 339 of the 1945 Oklahoma Legislature.

13. That the West Cement Medrano pool is a field within the meaning of that term as used in the second paragraph of Section 2 of H. B. 339 of the 1945 Oklahoma Legislature; that the term "field" in ordinary usage has no fixed or definite meaning but is sometimes used to refer to the general area where a number of oil or gas producing formations are found and at other times used to refer to a particular common source of supply or pool; that as used by the Legislature aforesaid, the term was intended to relate to the particular common source of supply or pool sought to be unitized under the Act and not to any general area which in a broader sense could be termed a field; that in effect said Act throughout relates

to and deals only with single common sources of supply of oil and gas.

Order

It is therefore ordered by the Corporation Commission of the State of Oklahoma as follows:

1. That the petition filed herein be and the same is hereby granted.

2. That the creation of the West Cement Medrano Unit as prayed in said petition be and the same is hereby authorized and approved.

3. That the Unit Area of said unit shall extend to and include all of the West Cement Medrano common source of supply of oil and gas outlined by the hatched lines on the map marked "Exhibit A" attached to the Plan of Unitization attached to this order.

4. That the Plan of Unitization hereto attached and which by reference is made a part of this order is hereby approved and shall constitute the Plan of Unitization of and for said West Cement Medrano Unit and the Unit Area of said Unit, all to the same extent and with the same force and effect as if copied herein in its entirety:

5. Nothing herein contained shall be construed as a waiver by the Commission of any of its powers or authority over the West Cement Medrano Unit or the persons comprising said unit, or the development and operation of the Unit Area thereof under the general oil and gas conservation laws of the State of Oklahoma, it being expressly recited that the Commission has and retains continuing jurisdiction over the operations carried on by the unit to the same extent that it would have jurisdiction over any other lessee or person producing oil and gas from the West Cement Medrano pool or field in the absence of unitization.

6. The Unit shall from time to time make such reports to the Commission concerning the operation by it of the Unit Area as may be requested by the Commission.

Done and Performed by the Corporation Commission at its office in the Capitol Office Building, Oklahoma City, Oklahoma, this 5th day of September, 1947.

CORPORATION COMMISSION OF OKLAHOMA,

(Signed) REFORD BOND, *Chairman.*
(Signed) RAY O. WEEMS, *Vice Chairman.*
(Signed) RAY C. JONES, *Commissioner.*

Attest:
(Signed) TOM MCMURRAY, *Secretary.*
[SEAL]

(Here follows Phtolithograph, side folio 189)

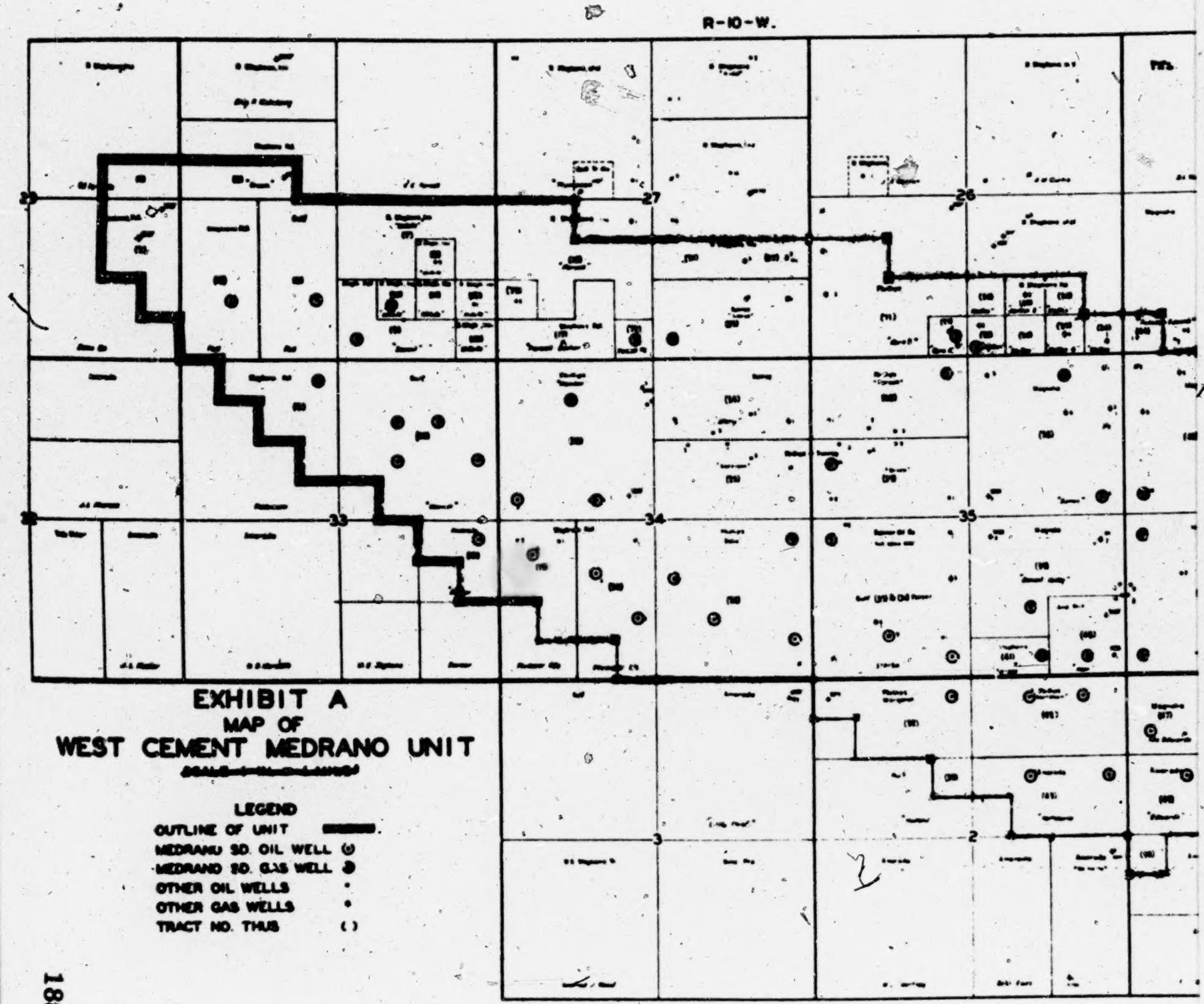
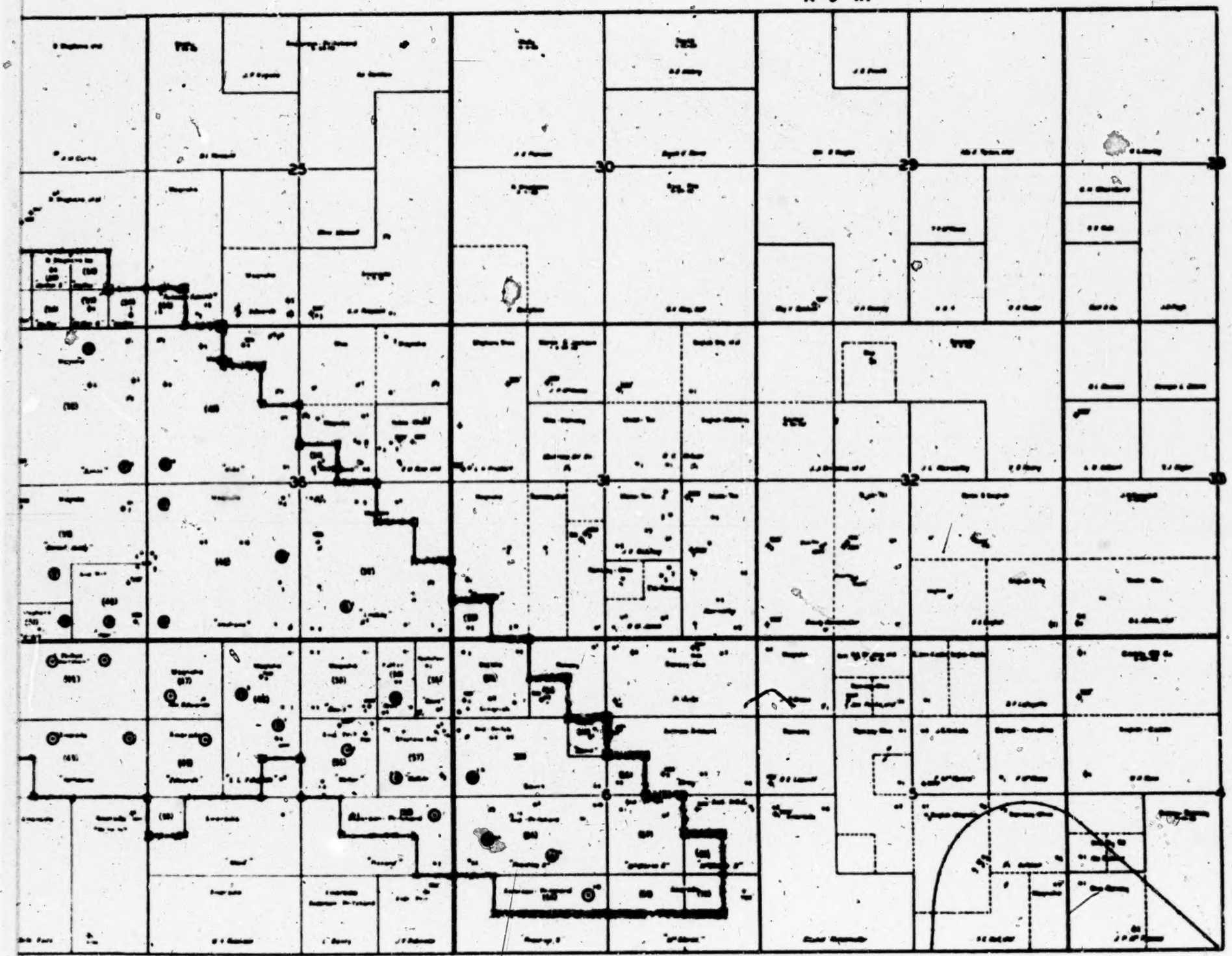


EXHIBIT A
MAP OF
WEST CEMENT MEDRANO UNIT

LEGEND

OUTLINE OF UNIT	
MEDRANO SD. OIL WELL	⊙
MEDRANO SD. GAS WELL	⊛
OTHER OIL WELLS	•
OTHER GAS WELLS	•
TRACT NO. THUS	( )


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IN THE SUPREME COURT OF THE STATE OF OKLAHOMA

No. —

PAUL STERBA and PAUL STERBA, JR., a minor, by and through his father and next friend, PAUL STERBA, and THE PALMER OIL CORPORATION, a corporation,

Petitioners,

vs.

CORPORATION COMMISSION OF OKLAHOMA, consisting of REFORD BOND, RAY O. WEEMS and RAY C. JONES; PHILLIPS PETROLEUM COMPANY, a corporation; AMERADA PETROLEUM CORPORATION, a corporation; ANDERSON-PRICHARD OIL CORPORATION, a corporation; RAY STEPHENS, INC., a corporation; STEPHENS PETROLEUM COMPANY, a corporation; GULF OIL CORPORATION, a corporation; MAGNOLIA PETROLEUM COMPANY, a corporation; CITIES SERVICE OIL COMPANY, a corporation; FOSTER PETROLEUM CORPORATION, a corporation; and SUNRAY OIL CORPORATION, a corporation,

Defendants.

NOTICE

To Each of the Above Named Defendants:

Take Notice that on the above and foregoing application, petition and exhibits attached thereto, Paul Sterba and Paul Sterba, Jr., a minor, by and through his father and next friend, Paul Sterba, and The Palmer Oil Corporation, as petitioners, will move the Supreme Court in the City of Oklahoma City, Oklahoma, on the ——— day of ————————, 1948, at the opening of Court on that day, or as soon thereafter as counsel can be heard, for an Order assuming original jurisdiction and directing that an al-

ternative writ of prohibition issue out of said Court directed to said defendants, commanding them to desist and refrain from any further proceedings in the enforcement of Order No. 20289, made by the Corporation Commission of the State of Oklahoma on September 5, 1947, and for such other relief as may be just and proper.

CLAUDE MONNET,
COLEMAN H. HAYES,
MART BROWN,
MARK H. ADAMS,
CHARLES E. JONES,
WILLIAM I. ROBINSON,
By .....
Attorneys for Petitioners.

Address of Attorneys: Claude Monnet, Coleman H. Hayes, Mart Brown, 1719 First National Bank Building, Oklahoma City, Oklahoma. Mark H. Adams, Charles E. Jones, William I. Robinson, 1008 Brown Building, Wichita, Kansas.

Proof of Service

STATE OF KANSAS,
County of Sedgwick, ss:

————————, after being duly sworn upon oath deposes and states:

That he served a copy of the foregoing notice, together with a copy of the application, petition and brief in support thereof, upon each of the defendants, as follows:

1. By delivering a true and correct copy to ———— ————, as attorney for the Corporation Commission of the State of Oklahoma, on the —— day of ————, 1948.

2. By delivering a true and correct copy on the following named persons, as resident agents for the following named defendants, on the —— day of ————, 1948:

(a) Bruce McClelland, Jr., Hightower Building, Oklahome City, Oklahoma, for Phillips Petroleum Company.

(b) George M. Green, 735 First National Bldg., Oklahoma City, Oklahoma, for Amerada Petroleum Corporation.

(c) T. H. Marshall, 1000 Apco Tower, Oklahoma City, Oklahoma, for Anderson-Prichard Oil Corporation.

(d) H. G. Stephens, 2600 Apco Tower, Oklahoma City, Oklahoma, for Ray Stephens, Inc.

(e) Waldo E. Stephens, 2600 Apco Tower, Oklahoma City, Oklahoma, for Stephens Petroleum Company.

(f) Katherine Manton, 1517 N. W. 20th, Oklahoma City, Oklahoma, for Gulf Oil Corporation and for Foster Petroleum Corporation.

(g) W. R. Wallace, 7th and Broadway, Oklahoma City, Oklahoma, for Magnolia Petroleum Company.

(h) B. A. Ames, First National Bldg., Oklahoma City, Oklahoma, for Cities Service Oil Company.

(i) Edward Howell, 2420 First National Bldg., Oklahoma City, Oklahoma, for Sunray Oil Corporation.

In Witness Whereof, I have hereunto set my hand this —— day of ————————, 1948.

————————————

Subscribed and sworn to before me this —— day of ————————, 1948.

————————————

Notary Public.

My commission expires:

APPENDIX "I"

GENERAL CONSERVATION STATUTES OF THE STATE OF OKLAHOMA

O. S. 1941, Title 52, Secs. 81 to 279, incl.

O. S. 1949 supp., Title 52, Secs. 84 to 127.2

OKLAHOMA STATUTES 1941

Title 52, Sections 81 to 279, Inclusive

General Provisions

"Par. 81. Oklahoma Oil and Gas Conservation Act—Change of title of officers and fund.—From and after the effective date of this Act, Chapter 131, Oklahoma Session Laws 1933,[1] shall be designated and shall be the 'Oklahoma Oil and Gas Conservation Act,' and in all places therein where the words 'proration umpire' are used the same shall be construed to mean 'conservation officer,' where the words 'assistant proration umpire' are used the same shall be construed to mean 'assistant conservation officer', where the words 'proration attorney' are used the same shall be construed to mean 'conservation attorney', where the words 'deputy proration umpire' are used the same shall be construed to mean 'deputy conservation officers' and where the words 'proration fund' are used the same shall be construed to mean "conservation fund", and said officers and said fund shall hereinafter be designated, and shall be, as above set forth. Laws 1935, p. 239, Par. 1.

"Par. 82. Consolidation of offices and positions—Certain positions abolished—Supervision and control—Additional duties of officers.—The duties of the office and the position of the Chief Oil and Gas Conservation Agent, created and now existing under and by virtue of law; is hereby transferred to and consolidated with the office and position of the Conservation Officer, as herein named in Section 1,[1a] and all of the duties exercised by said Chief Oil

[1] Sections 84-135 of this title.

[1a] Section 81 of this title.

and Gas Conservation Agent will, after the passage of this Act, be exercised by the Conservation Officer as herein named in Section 1.

"The positions, respectively, of Chief Oil and Gas Conservation Agent, and six (6) of the eleven Conservation Officers, created and now existing by virtue of law under the 'Bureau for the Conservation of Oil and Gas,' are hereby abolished, and, from and after the effective date of this Act, the other officers and employees created and now existing by virtue of law under the 'Bureau for the Conservation of Oil and Gas' shall be under the supervision and control of the Conservation Officer as herein named in Section 1, and in addition to their present duties shall hereafter perform all duties imposed by said Chapter 131, Session Laws, 1933,[1b] and the statutory salaries thereof shall be paid from the said Conservation Fund; and the duties now imposed on the officers and positions by said Chapter 131, Session Laws, 1933, shall also include the enforcement of all the laws, and the rules and regulations of the Corporation Commission pertaining to oil and gas. Laws 1935, p. 239, Par. 2.

"Par. 83. Well log division—Supervision and control—Disposition of fees—Stenographer or clerk.—The Well Log Division of the Corporation Commission as now existing shall, from and after the effective date of this Act, be under the supervision and control of said Conservation Officer, and all fees collected by said division shall be paid into the Conservation Fund. One or more of the stenographers or clerks mentioned in Section 4 hereof[1c] shall be assigned to perform the duties of the Well Log Division. Laws 1935, p. 239, Par. 3; Laws 1941, p. 217, par. 6.

"Par. 84. Definitions.—For the purposes of this Act:[1]

"(a) The term 'Commission' shall mean the Corporation Commission.

"(b) The word 'Person' shall include any individual, copartnership, corporation, common law or statutory trust, or association of whatever character.

[1b] Sections 84-135 of this title.

[1c] Section 127 of this title.

"(c) The term 'Common Source of Supply' shall comprise and include that area which is underlaid, or which from geological or other scientific data, or from drilling operations or other evidence appears to be underlaid by a common accumulation of oil or gas, provided that if any such area is underlaid, or appears from geological or other scientific data, or from drilling operations, or other evidence to be underlaid by more than one common accumulation of oil or gas separated from each other by strata of earth and not connected with each other, then such area shall as to each said common accumulation of oil or gas be deemed a separate common source of supply.

"(d) The word 'Oil' shall mean crude oil or petroleum.

"(e) The term 'Producer of Oil' shall mean any person who alone or in association with another person or persons shall have the right to drill into and produce oil from or who has any interest in oil produced from any common source of supply of oil in this State.

"(f) The term 'Operator' shall mean any producer of oil who has drilled a well or wells into a common source of supply and is engaged in operating such well or wells for the purpose of producing oil or gas therefrom.

"(g) The term 'Taker' shall include any person, who, acting alone, or jointly with any other person or persons, shall directly or indirectly purchase or transport by any means whatsoever or otherwise remove oil or gas from any common source of supply in this State. Laws 1933, ch. 131, p. 278, Par. 1.

"Validity.—Grison Oil Corporation v. Corporation Commission, 186 Okl. 548, 99 P. 2d 134; Patterson 1. Stanolind Oil & Gas Co., 59 S. Ct. 259, 305 U. S. 376, 83 L. Ed. 231, dismissing appeal 77 P. 2d 83, 182 Okl. 155; Indian Territory Illuminating Oil Co. v. Larkins, 168 Okl. 69, 31 P. 2d 608; Sterling Refining Co. v. Walker, 165 Okl. 45, 25 P. 2d 312; Rich v. Doneghey, 71 Okla. 204, 177 P. 86, 3 A. L. R. 352.

"Construction and application.—Gilmer Oil Co. v. Corporation Commission of Oklahoma, 177 Okl. 505, 61 P. 2d 22; State ex rel. Oklahoma Tax Commission v. Barnsdall Refineries, 56 S. Ct. 340, 296 U. S. 521, 80 L. Ed. 366, affirm-

ing Barnsdall Refineries v. Oklahoma Tax Commission, 171 Okla. 145, 41 P. 2d 918, certiorari granted State of Oklahoma ex rel. Oklahoma Tax Commission v. Barnsdall Refineries, 56 S. Ct. 97, 296 U. S. 556, 80 L. Ed. 392."

Par. 85. Waste of oil—Definition and prohibition—Rules, regulations and orders.—The term 'waste' as used in this Act,[1] as applied to the production of oil, in addition to its ordinary meaning and in addition to the meaning given thereto by any other provision of this Act, shall include economic waste, under-ground waste, including water encroachment in the oil and/or gas bearing strata. The use of reservoir energy for oil producing purposes by means or methods that unreasonably interfere with obtaining from the common source of supply the largest ultimate recovery of oil, surface waste, and waste incident to the production of oil in excess of transportation or marketing facilities, or reasonable market demands. The production of oil or gas in the State of Oklahoma in such manner and under such conditions as to constitute waste as in this Act defined is hereby prohibited and the Commission shall have authority and is charged with the duty to make rules, regulations, and orders for the prevention of such waste, and for the protection of all fresh water strata and oil and/or gas bearing strata encountered in any well drilled for oil or gas. Laws 1933, ch. 131, p. 279, Par. 2; Laws 1935, p. 232, Par. 1.

Validity. Sterling Refining Co. v. Walker, 165 Okl. 45, 25 P. 2d 312.

Administration of law. British American Oil Producing Co. v. Corporation Commission of Oklahoma, 180 Okl. 468, 69 P. 2d 669.

Jurisdiction and power of Commission. Grison Oil Corporation v. Corporation Commission, 186 Okl. 548, 99 P. 2d 134; Croxton v. State, 186 Okl. 249, 97 P. 2d 11; Gilmer Oil Co. v. Corporation Commission, 183 Okl. 95, 80 P. 312; Gilmer Oil Co. v. Corporation Commission of Oklahoma, 177 Okl. 505, 61 P. 2d 22.

Par 86. Waste of gas—What included—Power of com-

[1] Sections 84-135 of this title.

mission to limit production.—The term "waste" as applied to gas contained in or produced from a common source of supply of oil shall, in addition to its ordinary meaning, include the unreasonable production and/or the inefficient or wasteful utilization of gas in the operation of oil wells drilled therein. In Such Quantities Or In Such Manner As Unreasonably To Reduce Reservoir Pressures, Or Unreasonably To Diminish The Quantity Of Oil That Ultimately Might Be Recovered From The Common Source of Supply, the escape, directly or indirectly, of gas from oil wells drilled therein into the open air in excess of the amount necessary in the efficient drilling, completion or operation thereof; the escape, blowing or releasing, directly or indirectly, into the open air of gas produced from wells productive of gas, only, or of gas and gasoline, only, drilled into any such common source of supply, save only such as is necessary in the efficient drilling and completion thereof; and the unnecessary depletion or inefficient utilization of the gas energy contained in such common source of supply. In order to prevent the waste or to reduce the dissipation of the gas energy contained in any such common source of supply, the Commission, in addition to its other powers in respect thereof, shall have authority to limit the production of gas from wells producing gas only or gas and gasoline only, to a percentage of the daily open flow capacity of such wells that is less than the percentage of oil production allowed to oil wells drilled therein. Laws 1933, ch. 131, p. 279, Par. 3; Laws 1935, p. 232, Par. 2.

"Par. 87. Common Source of supply of oil—Restriction to proportion of nonwasteful production—Powers of Commission.—Whenever the full production of any common source of supply of oil in this State can only be obtained under conditions constituting waste, then any person having the right to drill into and produce oil from any such common source of supply may, except as otherwise authorized and/or in this Act,[1] provided, take therefrom only such proportion of all oil that may be produced therefrom without waste as the production of the well or wells of

[1] Sections 84-135 of this title.

any such person bears to the total production of such common source of supply. The Commission is authorized to regulate the taking of oil from any or all such common sources of supply within the State of Oklahoma so as to prevent the inequitable or unfair taking from any common source of supply, and to prevent unreasonable discrimination in favor of any such common source of supply against another."

"Well spacing and drilling units. (a) To prevent, and to assist in preventing, the various types of waste prohibited in said Chapter 131, as amended by this Act,[1] or any of said wastes said Corporation Commission by orders, rules and regulations made in conformity with the procedural requirements of Chapter 131, Session Laws of Oklahoma, 1933,[2] shall have the power to establish well-spacing and drilling units of uniform and specified size and shape for any common source of supply discovered in this State after this Act shall become effective, or for any common source of supply producing in said State when this Act shall become effective where the well-spacing and drilling unit established for said producing common source of supply shall not unreasonably prejudice, affect, or impair the correlative rights and obligations of the producers of oil and royalty owners interested in said common source of supply. The drilling unit shall not exceed ten (10) acres in size, unless eighty per cent (80%) or more of the lessees of record as of the date of bringing in the first well and owning at least eighty per cent (80%) of all the acreage embraced within the probable producing area of the common source of supply agree to a larger unit, but in no event shall such a drilling unit exceed forty (40) acres. Provided, that sub-section (a) shall not apply to oil fields producing from a common source of supply and already developed or substantially drilled and developed at the time of the passage of this Act, unless unanimously agreed to by all operators therein.

"Determination of size and shape of drilling units—Location of Wells. (b) in establishing a well-spacing or

[1] Sections 85-87 of this title.

[2] Sections 84-135 of this title.

drilling unit for a common source of supply hereunder, the acreage to be embraced within the unit and the shape thereof shall be determined by the Commission from the evidence introduced at the hearing, and the following facts, among other things, shall be material; (1) The lands embraced in the common source of supply as then defined; (2) The plan of well-spacing then being employed in said source of supply; (3) The depth of such producing wells as may already have been completed therein; (4) The thickness, porosity and permeability of the producing sand in said source of supply; (5) The nature and character of the reservoir energy found therein; (6) The formations encountered in any wells then drilling in said source of supply; (7) Cores taken from said source of supply; (8) The history and producing characteristics of wells in other sources of supply producing from the same or similar formations; and (9) Any other available geological or scientific data pertaining to said source of supply which may be of probative value to said Commission in determining the proper spacing and well drilling unit therefor, with due and reasonable allowance for the correlative rights and obligations of the producers of oil and royalty owners interested therein; Provided, That In Making An Order Under This Sub-Section A Plat Showing The Surface Area Included Therein And The Size, Form, And Shape Of The Spacing Or Drilling Unit Established Shall Be Attached Thereto And Subject To The Other Provisions Of This Act, said order shall direct that where a unit is held or owned as an entirety the well permitted that unit shall be located as near the center thereof as may be. Provided, however, if such a unit is located on the edge of a common source of supply and adjacent to a producing unit, then upon application, notice and hearing before the Commission, in conformity with the procedural requirements of Chapter 131, Session Laws of Oklahoma, 1933,[1] by order of the Commission, the well on such a unit may be drilled at other than the approximate center.

"Separately owned tracts within single unit. (c) If

[1] Sections 84-135 of this title.

two or more separately owned tracts are embraced within an established spacing or drilling unit, any oil lessee or other person having the right to drill one of said separately owned tracts may do so; Provided, the allowable production from said separately owned tract shall be such proportion of its daily capacity as herein determined as the acreage of said separately owned tract bears to the entire acreage of the spacing or drilling unit upon which it is drilled. If, under the conditions first recited in this subsection, an oil lessee or other person owning a majority or more of the acreage included in the spacing unit, and/or having the right to drill the same for oil, shall elect to drill a well on his acreage, he shall give the other oil lessees or persons owning acreage in the unit, and/or having the right to drill the same for oil, 15 days written notice of his intention to drill, and such notice shall show the estimated reasonable cost of drilling, equipping and completing the well. And any of said oil lessees or persons within said 15 day period, by contributing to the lessee or person intending to drill said well such proportion of the estimated reasonable cost of drilling, equipping and completing the same, as the acreage of the contributor bears to the total acreage owned, or controlled for oil producing purposes by oil lessees or persons, who are participating in the cost of the well, shall thereupon be entitled to a corresponding share of seven-eighth (7/8ths) of all production from said well, said payment to be made to the person drilling the well before he shall set his surface casing therein; each contributor, in virtue of his contribution, thereupon to become the owner of his proportionate share in the material and equipment used in drilling or operating said well. Any lessee or person so contributing to the cost of said well on said majority acreage shall thereupon be bound and obligated under the provisions of this subsection not to drill a well on the separate acreage held by him in said unit. Where another or other lessees or persons owning separate tracts in the unit contribute to the cost of the well drilled on the majority acreage, as above provided, the allowable production from said well

shall be such proportion of its daily capacity as herein determined, as the majority acreage plus the separately owned tract or tracts of the contributor or contributors bears to the entire acreage of the unit. Provided, if any person intending to contribute, as above set forth, shall not be satisfied with the estimate of the cost of drilling, or with the financial ability of the majority owner to drill the well, and if, thereupon, either or both of these questions cannot be settled by agreement among all persons intending to contribute to the cost of the well and the majority owner, the dissatisfied person, upon written application filed with the Commission and under the procedural requirements of Section 131, Session Laws of 1933,[1] including notice, shall have a hearing on his application before the Corporation Commission to determine either one or both of said questions as submitted in his said application. If the evidence before the Commission warrants a reduction in the estimated cost of said well, as herein provided, the Commission shall so order, and obedience to an order so made shall comply with the provisions of this subsection; Provided, further, that if on the final completion of the well, it shall be found that the original estimate of the person drilling the same, or the reduction thereof by the Commission, as herein provided, does not represent the actual reasonable cost of drilling, equipping and completing said well, nothing herein contained shall prevent the parties sustaining such cost, by agreement, or appropriate legal proceedings, from adjusting said actual cost among themselves, in the proportions hereinbefore set forth. If the evidence at said hearing warrants, the Commission by its order, shall require the person who gave notice of his intention to drill the majority acreage to deposit with the Commission, or in a bank designated by it, or in one agreed upon by the parties, a sufficient sum in cash to cover the estimated cost of drilling, equipping and completing said well, as made by said person, or as readjusted by said Commission, said sum to be returned to the depositor upon evidence furnished the Commission

[1] Sections 84-85 of this title.

that the cost of said well has been fully paid; or, in lieu thereof, the Commission may require the person intending to drill said well to file with said Commission his bond in the penal sum equalling said estimated cost, payable to the parties who shall have agreed to contribute to the cost of said well, as herein provided, duly signed by the principal and a responsible surety company qualified to do business in the State of Oklahoma. The Commission, in its said order, shall fix the time for the depositing of said money, or the filing of said bond, and in said order the terms and conditions of said bond shall be set forth. The person operating the well on said majority acreage, shall at all times have a lien on all the production of the persons contributing to the cost of the well to secure the payment of their respective proportions of the reasonable operating costs of said well; provided, further, however, that not more than Twenty-five ($25.00) Dollars shall be charged per month, per well, by the person operating the well for gross over-head and administration costs.

"Nothing in this sub-section contained shall prevent an oil lessee or other person, having the right to drill on a separate tract in a unit and who has not contributed to the cost of the well drilled on the majority acreage, as above provided, from drilling one well on his separate tract. In the event a producing well, or wells, is completed upon a unit where there are two or more separately owned tracts, any royalty owner, or group of royalty owners, holding the royalty interest under a separately owned tract, shall share in one-eighth (1/8) of all the production from the well or wells drilled within the unit in the proportion that the acreage of their separately owned tract bears to the entire acreage of the unit; Provided, where the lease of a person who has sustained his share of the cost of drilling the well on the majority acreage, as herein provided, stipulates a royalty in excess of one-eighth (1/8) of the production, or said lease shall be subject to an over-riding royalty, to an oil payment, or other obligation, than the lessee of said lease, out of his share of the seven-eighths (7/8th) of the production from the well drilled on said majority acreage,

as hereinbefore provided, shall sustain and pay said excess royalty, over-riding royalty, or oil payment, and therefrom meet said other obligation due in respect of the separate tract held by him. The Corporation Commission, by its rules and regulations, is hereby vested with power to carry all the provisions of this sub-section into effect in order to preserve uniform well spacing throughout a common source of supply, where spacing units have been established; and, further, more effectively to prevent waste, as prohibited by Chapter 131, of the Session Laws of 1933, as amended by this Act, and to protect and adjust the correlative rights and obligations of all persons interested in a particular established unit, or in the source of supply wherein spacing units have been established under this Act.

"Enlargement of boundaries of common source of supply. (d) The Commission under proper application and proof, and in conformity with the procedural requirements of said Chapter 131, of the Session Laws of 1933,[1] shall have the power to enlarge and extend the boundaries of a common source of supply when oil development, or the trend of such development, shall indicate that an additional area should be included therein and, thereupon, the Commission, by proper order, shall require the same spacing and drilling units to the additional portion of the common source of supply. Laws 1933, ch. 131, p. 280, Par. 4; Laws 1935, p. 233, Par. 3.

"Par. 88. Rules and regulations—Considerations—Unreasonable discrimination—The Commission in making such rules and regulations as it shall deem necessary to carry out, effect the purposes, and enforce the provisions of Sections 1, 2, 3, and 4 of this Act,[2] shall give consideration to the prevention of waste caused by encroachment of water in the oil or gas bearing strata and the water conditions in any well or wells located in a common source of supply and/or to the smallness of production of any well or wells, by reason of which such well or wells cannot be

[1] Sections 84-135 of this title.

[2] Sections 84-87 of this title.

operated and oil produced therefrom in the proportion provided by Section 4[1] except at a loss to the owner of such well or wells and/or except so as to result in waste as defined in this Act and/or except to the injury and damage to other well or wells located in the same common source of supply; and, in order to prevent such loss, waste, injury, or damage, shall by rules and regulations permit any operator of such well or wells to produce a greater proportion of oil therefrom than provided by Section 4 hereof, provided that in so doing the Commission shall not permit unreasonable discrimination in favor of such operators against other operators in the same common source of supply. Laws 1933, ch. 131, p. 280, Par. 5.

"Par. 89. Determination of capacity of wells—Treating wells as entirety—Limitation on reduction.—For the purpose of determining the total production from any common source of supply, and the amount of oil which the operators of the wells therein are entitled to take therefrom, the capacity of each well to produce oil shall be from time to time ascertained and determined by the Commission under rules and regulations prescribed by it. All or any two or more of the wells on any lease or holding in any prorated common source of supply in this State may, when so provided by rule or regulation issued by the Commission, be regarded and treated by the Commission as an entirety instead of prorating each well thereon separately when and to the extent that such can be done without waste and without injury or injustice to the operators of other leases or holdings in the same common source of supply, and when an over-production of oil occurs from any prorated well producing in any common source of supply, the over-production of oil from such well may be by the Commission charged to the lease on which such well is located, as an entirety, when the Commission finds that the same may be done without injury or injustice to the operators and owners of offset wells; provided further that the capacity of each well in any prorated common source of supply to produce oil, hereinafter called potential, shall be ascer-

[1] Section 87 of this title.

tained and determined at regular intervals, provided that not more than six (6) months shall elapse between the determining of one potential before another potential shall be determined, and provided further that regardless of anything in this Act [1] to the contrary contained or authorized the Commission shall not by rule, regulation, order or otherwise reduce the allowable production from any oil well in this State below twenty-five (25) barrels of oil per day or its full production if it is incapable of producing twenty-five (25) barrels per day. Laws 1933, ch. 131, p. 281, Par. 6.

"Par. 90. Orders, rules and regulations—Each common source of supply.—The Commission is hereby empowered to make all such orders, rules and regulations applicable to each common source of supply as it may find to be necessary or proper and/or to make general orders, rules and regulations applicable alike to all common sources of supply in the State, in order to carry out the provisions of Sections 1 to 6, inclusive of this Act.[2] Laws 1933, ch. 131, p. 281, Par. 7.

"Par. 91. Meters on pipe lines—Commission to designate type—Inspection—Cost of operation.—The Commission is hereby empowered and authorized by its orders, rules, and regulations, to require that meters be installed (a) upon any pipe line used in purchasing and/or transporting oil in or out of any prorated common source of supply and/or from storage adjacent thereto and (b) upon any pipe line used in gathering and/or transporting oil from leases or storage in such common source of supply, to refineries, loading racks, and field or other storage, and/or to deliver such oil to other transportation lines in or near such fields. All meters installed pursuant to any order, rule or regulation of the Commission made or issued by it under the provisions of this Section shall be of a type or types approved by it and the Proation Umpire [3] shall be in mechanical construction and accuracy in operation, sufficient to register the oil transported through the pipe

[1] Sections 84-135 of this title.
[2] Sections 84 to 89 of this title.
[3] Changed to Conservation Officer. See section 81 of this title.

line or pipe lines upon which such meters are installed with a degree of accuracy of not more than two (2) per cent from accurate. Said meters shall be installed and maintained at the cost and expense of the owner and/or operators of the pipe lines on which the same are required to be installed. No owner or operator of any such pipe line upon which a meter or meters shall have been installed and/or is being maintained pursuant to orders, rules and regulations of the Commission made hereunder, shall operate such pipe line or pipe lines at any time when the meter or meters thereon are not properly registering the flow of oil to the knowledge of such owner or operator or when by the exercise of reasonable diligence he or it should have known thereof, except or unless permission to do so by order of the Commission shall have been granted. Said meters shall at all times be subject to inspection and reading by the Proration Umpire,[1] his deputies, or any person authorized and ordered by the Commission to inspect or read the same. The provisions of this Section shall be applied and enforced by the Commission only when it finds and holds that the installation of such meter or meters is necessary to the enforcement of this Act,[2] and the installation of meters shall not be required generally, and for other purposes as a means of measuring oil. Laws 1933, ch. 131, p. 281, Par. 8.

"Par. 92. Reports—Oil purchased or transported—Forms—Verification.—The Commission is hereby authorized and empowered by orders, rules or regulations issued by it to require all takers of oil in or out of any prorated common source of supply to make and file periodically with the Commission, at such time or times, as often as the Commission shall in such orders, rules and regulations provide, reports of all oil purchased and/or transported by such takers within or from such prorated fields, and that duplicate copies thereof shall be filed with the Proration Umpire.[3] Said reports shall be upon forms prescribed by the Commission and shall describe the leases and prop-

[1] Changed to Conservation Officer. See section 81 of this title.
[2] Sections 84-135 of this title.
[3] Changed to Conservation Officer. See section 81 of this title.

erties, and, if ordered by the Commission, the wells from which crude oil has been taken by any such taker, and the amount thereof, and shall contain such other information as will enable or assist the Commission in enforcing the provisions of this Act,[1] which may be required by the orders, rules and regulations of the Commission; and shall be verified by the maker thereof upon oath. Laws 1933, ch. 131, p. 282, Par. 9.

"Par. 93. Operators—Books—Oil produced and sold.—Every operator in any prorated common source of supply shall, when required by any rule, order, or regulation of the Commission, keep books showing accurately (a) the amount of oil produced daily from each lease or property operated by him or it and, if the Commission shall order, from each well owned or operated by him or it on each such lease or property, and (b) the amount of oil sold or otherwise disposed of each day from each of his or its said properties, and, when so required by the order of the Commission, from each of his or its wells thereon and to whom the same is sold and delivered. Said books and all documents and records made by any such operator relating to the operation of his or its properties or wells in any such prorated common source of supply shall at all times be open for the inspection of the Commission or any officer, agent or employee authorized and directed by the Commission by its order to inspect or examine the same; and shall, upon the order of the Commission or the request of any such authorized officer, agent or employee be made immediately available for such inspection. Laws 1933, ch. 131, p. 282, Par. 10.

"Par. 94. Maps and drawings—Location of pipe lines and connections—Verification.—The Commission may require any and all operators in any prorated common source of supply to file with it maps or drawings which shall show the location of all pipe lines, connections, pumps and tanks, the size and capacities thereof used for producing or transporting oil from each well owned by such operator in such common source of supply, and may likewise require the

[1] Sections 84-135 of this title.

takers of oil from such common source of supply to file with the Commission maps and drawings showing the pipe lines, connections, tanks, size and capacity thereof used by such takers in taking or transporting oil from such common source of supply and from each and all wells therein. The correctness of such maps and drawings shall be verified upon oath as shall be provided by the orders, rules or regulations of the Commission. Laws 1933, ch. 131, p. 283, Par. 11.

"Par. 95. Reports—Quantity of oil produced and moved—Penalty.—The Commission shall by order require every operator in each prorated common source of supply to file periodically with it when and as often as required, and upon forms approved by it, reports which shall show (a) the quantity of oil produced, and the quantity of oil removed by each operator from his or its each lease or property in said common source of supply, and, unless otherwise provided by rule or regulation of the Commission, from his or its each well in said common source of supply, and (b) the amount of oil run to storage, delivered to common carrier, or to a purchaser or transporter through the operator's own pipe line, and, in the latter case to what destination, and the name or names of the person or persons purchasing or taking such oil, and which shall contain such further information as may be required by the Commission.

"If any operator shall fail or refuse to file any report or reports required by this Section or by any order, rule or regulation of the Commission made in pursuance of this section, in addition to the other penalties provided for in this Act [1] for such violation, the Commission may by its order require that said operator shall discontinue to produce any oil from any leasehold, property or well with respect to which such operator has failed or refused to make and file such report, until he or it shall have filed same; provided when any such operator shall have filed with the Commission any such report or reports as required by this section, or any order, rule or regulation of

[1] Sections 84-135 of this title.

the Commission, the Commission shall permit such operator to produce his or its well or wells, theretofore shut down by such order of the Commission, so as to recover and make up the oil that such operator would have been lawfully entitled to produce during the period such well or wells were shut down, if the order of the Commission requiring him or it to discontinue or reduce production of oil therefrom until such report or reports were filed had not been made. Laws 1933, ch. 131, p. 283, par. 12.

"Par. 96. Verification of reports, statements, maps and drawings.—When by an order, rule or regulation of the Commission made in pursuance of this Act,[1] any report, statement, map or drawing duly verified, is required to be filed with the Commission or any other officer, by any firm, trust, association or corporation, such report, statement, map or drawing shall be verified by (a) such member, agent or employee of such firm, trust or association, and (b) such officer or officers, agent or employee of such corporation as shall be provided or required by order, rule or regulation of the Commission. Laws 1933, ch. 131, p. 284, par. 13.

"Par. 97. Commission—Jurisdiction to make orders, rules and regulations—Hearings.—The Commission upon its own motion, or upon the petition of the Attorney General, or of the Proration Attorney,[1a] or of the Proration Umpire,[2] on behalf of the State, or of any operator, producer, or taker of oil from any common source of supply, to be affected by any such order, rule or regulation, filed with the Commission, shall have jurisdiction to make any and all orders, rules and regulations authorized and/or provided for in Sections 1 to 13 of this Act, inclusive,[3] provided that said orders, rules, and regulations shall be made only after a hearing before the Commission, of which the Commission shall have given at least ten (10) days' notice, by one publication of such notice in some newspaper of general circulation printed in Oklahoma City, Oklahoma,

[1] Sections 84-135 of this title.

[1a] Changed to Conservation Attorney. See section 81 of this title.

[2] Changed to Conservation Officer. See section 81 of this title.

[3] Sections 84-96 of this title.

at which hearing the Attorney General, or the Proration Attorney[1] or the Proration Umpire[2] upon behalf of the State, any operator or taker or producer of oil from any common source of supply, or any other person interested in such common source or sources of supply to be affected by the order, rule or regulation sought, shall have an opportunity to offer evidence and to be heard in support of or in opposition to such motion or petition for such order, rule, or regulation. Such notice of hearing shall be signed by at least a majority of the members of the Commission and shall specify (a) the time and place of hearing, (b) briefly the general nature of the order or orders, rule or rules, regulation or regulations sought in the proceeding before the Commission, and (c) the name or names or general description of the common source or sources of supply that may be affected by any such rule, order, or regulation, unless by such motion or petition filed the order or orders, rule or rules, regulation or regulations sought are intended to apply and affect the entire State.

"With respect to any motion or petition filed under the provisions of this Act,[3] the service of notice thereof and any hearing thereon, and any order, rule or regulation, made thereon, the Commission shall have the power of a Court of record, and shall have the further powers and authority with respect thereto enumerated and provided in Section 15 of this Act;[4] provided, that the Commission upon the date set or fixed in the notice of hearing in any proceeding commenced under the provisions of this Section, or at the time of such hearing therein, or of making any order or orders, rule or rules, regulation or regulations therein, may by its order provide that said proceeding shall be continued upon the docket of the Commission for further hearing or hearings therein, and for the issuance and/or promulgation of further order or orders, rule or rules, or regulation or regulations by the Commission

[1] Changed to Conservation Attorney. See section 81 of this title.
[2] Changed to Conservation Officer. See section 81 of this title.
[3] Sections 84-135 of this title.
[4] Section 98 of this title.

therein, modifying, supplementing, revoking or vacating any previous order, rule or regulation of the Commission therein as it shall determine; and if the Commission shall, in any such order rule or regulation continuing any such case upon its docket for further hearings and orders therein, fix the time and place of such hearing or hearings, no further notice thereof shall be required; but if the Commission shall not, in its orders continuing upon its docket any such proceeding for further hearings and orders therein, fix the time and place of such hearing or hearings, then no further hearing therein shall be had until notice thereof shall have been given for the same length of time and in the same manner provided in this Act for notice of the initial hearing in said proceeding. Laws 1933, ch. 131, p. 284, par. 14.

"Par. 98. Powers of Commission—Marshal of Commission.—In all matters pertaining to the making, issuing and enforcement of its orders, rules and regulations made under the provisions of this Act,[1] the Commission shall have and exercise all of the following powers and authority; to-wit (1) Of visitation and of a Court of Record; (2) To administer oaths; (3) To compel attendance of witnesses; (4) To compel the production of books and records; (5) To punish for contempt any person guilty of any disrespectful or disorderly conduct in the presence of the Commission while in session; (6) To punish as for contempt any disobedience or violation of the provisions of this Act and of any of its orders, rules, regulations, and judgments made or rendered by it under and in pursuance of the provisions of this Act; (7) To enforce the provisions of this Act, and compliance with any of its orders, rules, regulations or judgments by appropriate process, and by shut down orders, ordering and directing the shutting down or discontinuance of production of oil from any well or well of or operated by the offender with respect to which complaint has been made; and by orders or writs remedial or otherwise necessary or proper, to carry into effect its orders, rules, and regulations; (8) To appoint or desig-

[1] Sections 84-135 of this title.

nate one of its agents or employees or one of the deputies to the Proration Umpire[a] to act as Marshal of the Commission, who shall serve as such Marshal during its pleasure without additional compensation for such services, and who shall attend the sessions of the Commission, and when directed by it shall serve and execute orders, subpoenas, commitments and other process issuing from it. Laws 1933, ch. 131, p. 285, par. 15.

"Par. 99. Filing of papers and documents—Use as evidence.—When under any provision of this Act[1] or of any order, rule or regulation made in pursuance of this Act, any petition, motion, return, pleading, report, statement, map or drawing is required to be filed with the Commission, the same shall be deemed to be filed when filed with the Secretary of the Commission. Duplicate copies of all reports, statements, maps or drawings shall also be filed with the Proration Umpire.[2] The original or any copy of any such reports, maps, drawings, statements or other documents duly certified by the Secretary of the Commission, when the contents thereof are material to the issues involved, shall be competent and admissible in evidence in any proceedings and hearings therein brought or had under the provisions of Section One (1) to Thirteen (13), inclusive, of this Act;[3] and any such original or certified copy thereof shall, in any proceeding upon complaint or prosecution as for contempt against any person for violation of this Act or of any order, rule or regulation of the Commission, be competent and admissible in evidence to establish admissions against interest made by any defendant or defendants to such complaint or prosecution who filed or caused to be filed such report, map, drawing, statement or other document. Laws 1933, ch. 131, p. 286, par. 16.

"Par. 100. Witnesses—Depositions.—The Commission may cause depositions of witnesses residing within or without the State to be taken in any proceeding pending before it in any manner provided by law for taking depositions

[a] Changed to Conservation Officer. See section 81 of this title.
[1] Sections 84-135 of this title.
[2] Changed to Conservation Officer. See section 81 of this title.
[3] Sections 84-96 of this title.

in civil actions in courts of record; and any deposition so taken shall be sealed up and endorsed with the title of the cause and the name of the officer taking the same, and by him addressed and transmitted to the Secretary of the Commission, where it shall remain under seal until opened by the Secretary on order of the Commission, or at the request of a party to the proceeding, or an attorney for such party. Laws 1933, ch. 131, p. 286, par. 17.

"Par. 101. Procedure—Rules of—Enforcement of orders and rules.—The Commission shall have power with or without any notice of hearing to make and promulgate rules of procedure not inconsistent with the provisions of this Act [1] to govern the filing, prosecution, hearing, and determination of proceedings authorized to be brought before the Commission and for the enforcement of its orders, rules and regulations made under the provisions of this Act; provided, that no order, rule or regulation of the Commission and no order made in the enforcement thereof shall be held void or be reversed merely because the Commission may not have promulgated procedural rules. Laws 1933, ch. 131, p. 286, par. 18.

"Par. 102. Contempt — Punishment — Enforcement of fines—Disposition of fines and penalties.—Punishment for contempt by the Commission of any person, guilty of any disrespectful or disorderly conduct in the presence of the Commission while in session, or for disobedience of its subpoena, summons or other process, may be by fine not exceeding $1,000, or by confinement in the county jail of Oklahoma County not exceeding one (1) year, or by both. Any person who shall disobey or violate any of the provisions of this Act [2] or any of the orders, rules, regulations or judgments of the Commission issued, promulgated or rendered by it, shall be punished as for contempt. Punishment by the commission in proceedings as for contempt for disobedience or violation of any provision of this Act or any of its orders, rules, regulations or judgments, issued, promulgated or rendered under the provisions of this Act,

[1] Sections 84-135 of this title.
[2] Sections 84-135 of this title.

shall be by fine not exceeding in amount $5,000, and each day such disobedience or violation shall continue shall constitute a separate and additional contempt, and shall be punished by separate and additional fines each in amount not in excess of aforesaid amount. Any fine or penalty assessed under the provisions of this Act shall constitute and be a lien upon all the property of the offender within the State, except the homestead of such offender, provided that, before any such fine or penalty shall become a lien upon any property of the offender as against third persons, a copy of the order or judgment of the Commission assessing such fine or penalty, certified by the Secretary of the Commission, shall be filed in the office of the Court Clerk of the County wherein any such property of the offender is located, and entered on the judgment docket of said court. If any such fine shall not be paid to the Commission within thirty (30) days after the order or judgment of the Commission imposing the same, the Commission shall issue an execution directed to the proration Umpire[1] commanding him to seize sufficient property of the offender to satisfy said fine; and it shall be the duty of the Proration Umpire to levy upon any property of the offender found within the State, and to sell and dispose of the same in like manner as now provided and required of sheriffs in this State in the levy upon and sale of property under an execution upon a judgment of a District Court of the State, and all costs incurred in the issuance, execution and sale under such levy shall be taxed against the defendant and collected in the same manner provided herein for the collection of such fine. All moneys collected as fines or penalties under the provisions of this Act, shall, when paid into or received by the Commission, be by it paid to the State Treasurer of the State for the credit of the Proration Fund.[2] Laws 1933, ch. 131, p. 287, par. 19.

"Par. 103. Contempt—Proceedings—How commenced—Complaint—Citation.—Proceedings as for contempt for disobedience or violation of the provisions of this Act[3] or

[1] Changed to Conservation Officer. See section 81 of this title.
[2] Changed to Conservation Fund. See section 81 of this title.
[3] Sections 84-135 of this title.

of the orders, rules, regulations and judgments of the Commission made, issued and/or rendered under the provisions of this Act, may be commenced by the filing with the Commission by (a) the Attorney General, or (b) the Proration Attorney,[2] or (c) the Proration Umpire,[3] or (d) Assistant Proration Umpire,[4] or (e) by any producer of oil or taker in the State, of a complaint which shall, when filed by any producer of oil or taker, be verified upon information and belief. Said complaint by whomsoever filed shall state, (a) the name of the person, firm, trust, corporation, or association against whom the complaint is made; (b) the order or orders, rule or rules, regulation or regulations and judgment or judgments of the Commission, violation of which is charged; (c) and briefly in general terms the acts or omissions of the defendant constituting the violation of which complaint is made. Any such complaint may charge against any defendant one or more violations of the provisions of this Act and/or of any rule, order or regulation of the Commission made hereunder; provided, that the acts or omissions of the defendant constituting each violation charged shall be briefly stated in general terms in separately numbered paragraphs or counts of such complaint. Upon the filing of any such complaint, the Secretary of the Commission shall issue in the name of the State by him as Secretary of the Commission, addressed to the defendant or defendants, a citation to the defendant or defendants in said complaint, to which shall be attached a copy of said complaint. Said citation shall state (a) the date on which and by whom said complaint was filed and the name of the complainant, (b) a brief general description of the nature of the complaint, (c) a reference to copy of the complaint which shall be attached to said notice, (d) the date on which said complaint is set for hearing, which shall not be earlier than ten days from the date of such citation, and (e) a statement that unless the defendant shall on or before said date for hearing file his or its pleadings to such complaints, allegations and

[2] Changed to Conservation Attorney. See section 81 of this title.
[3] Changed to Conservation Officer. See Section 81 of this title.
[4] Changed to Asistant Conservation Officer. See section 81 of this title.

charges therein contained, the same shall be taken as confessed. Service of said citation in such proceedings for contempt shall be had and return thereof made as hereinafter provided. Laws 1933, ch. 131, p. 287, par. 20.

"Par. 104. Right of entry and inspection by conservation officer, his assistants and deputies.—The Proration Umpire,[1] his assistant and deputies shall have the right at all times to go upon and inspect oil and gas properties from which oil or gas is being produced, pipe lines, tank farms, and pump stations, for the purpose of ascertaining whether the provisions of this Act[2] and the orders, rules, regulations and judgments of the Commission made in pursuance of the provisions of this Act are being complied with, and shall report to the Commission any violation thereof. Laws 1933, ch. 131, p. 288, par. 21.

"Par. 105. Power to close wells—Orders regulating flow and production—Motion or petition for order—Temporary orders.—The Commission shall have the power to order closed, and by the Proration Umpire,[1] his assistant, and deputies, to close any well or wells which have been over-produced in violation of this Act[2] and/or of the orders, rules and regulations of the Commission and/or to order that the production of oil from such well or wells shall be reduced, until such condition of over-production of any such well or wells has been equalized so that the operator of such well or wells shall not be permitted to take therefrom a greater amount of oil than is permitted under the provisions of this Act and/or the orders, rules and regulations of the Commission, made in pursuance of the provisions of this Act; and may issue and enforce other orders to regulate the flow and production of oil and gas in such common source of supply for the purpose of preventing or stopping violations of its orders, rules or regulations, prescribing proration of production or ratable taking of oil in any common source of supply. Said orders of enforcement may be issued by the Commission upon its own motion, or upon written petition filed by (a) the Attorney

[1] Changed to Conservation Officer. See section 81 of this title.
[2] Sections 84-135 of this title.

General, or (b) the Proration Attorney,[1] or (c) the Proration Umpire, in the name of the State; or by any person interested in the proration or ratable taking of oil from any common source of supply where any such violation of the orders, rules or regulations of the Commission is alleged to have occurred. Said motion or petition for such orders of enforcement shall be filed with the Secretary of the Commission and shall state the name of the violator or violators and the provision of the statute, or the order, rule or regulation which it is charged are being violated, and briefly in general language the act or acts, omission or omissions, done or being done by the alleged violator or violators which constitute the violation of statute or of the order, rule or regulation of the Commission complained of. Any such petition, other than motions by the Commission for such enforcement orders, shall be verified by the officer or person filing the same, but such verification may be made upon affiant's best information and belief. Whenever any such motion or petition for an order of enforcement shall charge that the violation or violations by the defendant therein of the provisions of this Act or of orders, rules and regulations of the Commission complained of, is that defendant has produced or is producing oil from any well or wells in any common source of supply at a rate in excess of that allowed by the orders, rules and regulations of the Commission applicable thereto, the Commission, in its discretion, may, at the time of the filing of any such motion or petition, or at any time thereafter prior to its final hearing thereon and issuance of final or permanent order in such proceeding, make or issue a temporary order or orders, ordering and directing the defendant or defendants in any such proceeding to shut down and discontinue immediately, or to curtail the production of oil from any well or wells alleged to be involved in the violations complained of so as to comply with the orders, rules and regulations of the Commission; and said temporary order may further provide and require that if the defend-

[1] Changed to Conservation Attorney. See section 81 of this title.

ant or defendants shall fail to shut down or curtail the production from any such well or wells so ordered in the manner required by such order of the Commission within twenty-four (24) hours from the time of service of said order, the Proration Umpire, his assistant or deputies shall thereupon go upon the premises upon which said well or wells are located, and shut down the production of oil from said well or wells until the hearing provided in said temporary order of the Commission shall have been held, and/or until the Commission shall otherwise order. The defendant or defendants against whom any such temporary order has been issued shall have the right to appear before the Commission at any time prior to the date for hearing in said proceeding and move that such temporary order be dissolved or modified, and show cause to the Commission why same should be done. The Commission upon hearing any such motion, which shall be promptly heard, and may be had with or without notice thereof to the petitioner, may in its discretion dissolve or modify such temporary order or continue the same until final hearing in said cause shall have been held. Provided, however, that if upon final hearing before the Commission in such proceeding, or upon appeal to the Supreme Court, if an appeal from the decision of the Commission in such proceeding shall be taken, it shall be determined that any such temporary order was wrongfully issued by the Commission, the defendant or defendants shall be permitted to produce their well or wells, shut down, or the production from which was reduced by such temporary order of the Commission, so as to recover or make up the oil such defendant or defendants could have lawfully produced from such well or wells during the period such well or wells were shut down or the production thereof was reduced, if such temporary order of the Commission requiring such well or wells to be shut down, or the production therefrom to be reduced had not been made by the Commission. Laws 1933, ch. 131, p. 288, par. 22.

"Par. 106. Notice on filing of motion or petition.—Upon the filing of any motion or petition for order or orders of

nary meaning, shall include economic waste, underground waste, surface waste, and waste incident to the production of crude oil or petroleum in excess of transportation or marketing facilities or reasonable market demands. The Corporation Commission shall have authority to make rules and regulations for the prevention of such wastes, and for the protection of all fresh water strata, and oil and gas bearing strata, encountered in any well drilled for oil. Laws 1915, ch. 25, par. 3.

"Par. 274. Common source of supply—Restrictions on production when full production would cause waste—Powers of Corporation Commission—Discrimination prohibited.—Whenever the full production from any common source of supply of crude oil or petroleum in this State can only be obtained under conditions constituting waste, as herein defined, then any person, firm or corporation, having the right to drill, into and produce oil from any such common source of supply, may take therefrom only, such proportion of all crude oil and petroleum that may be produced therefrom, without waste, as the production of the well or wells of any such person, firm or corporation, bears to the total production of such common source of supply. The Corporation Commission is authorized to so regulate the taking of crude oil or petroleum from any or all such common sources of supply, within the State of Oklahoma, as to prevent the inequitable or unfair taking, from a common source of supply, of such crude oil or petroleum, by any person, firm, or corporation, and to prevent unreasonable discrimination in favor of any one such common source of supply as against another. Laws 1915, ch. 25, par. 4.

"Par. 275. Wells gauged—Regulation by Corporation Commission—Agents.—For the purpose of determining such production, a gauge of each well shall be taken under rules and regulations to be prescribed by the Corporation Commission, and said Commission is authorized and directed to make and promulgate, by proper order, such other rules and regulations, and to employ or appoint such

agents with the consent of the Governor, as may be necessary to enforce this act.[1] Laws 1915, ch. 25, par. 5.

"Par. 276. Enforcement of act—Hearings before corporation commission.—Any person, firm, or corporation, or the Attorney General on behalf of the State, may institute proceedings before the Corporation Commission, or apply for a hearing before said Commission, upon any question relating to the enforcement of this act,[1] and jurisdiction is hereby conferred upon said Commission to hear and determine the same. Said Commission shall set a time and place, when and where such hearing shall be had and give reasonable notice thereof to all persons or classes interested therein, by publication in some newspaper or newspapers, having general circulation in the State, and in addition thereto, shall cause reasonable notice in writing to be served personally on any person, firm or corporation complained against. In the exercise and enforcement of such jurisdiction, said Commission is authorized to determine any question or fact, arising hereunder, and to summon witnesses, make ancillary orders, and use mesne and final process, including inspection and punishment as for contempt, analogous to proceedings under its control over public service corporations, as now provided by law. Laws 1915, ch. 25, par. 6.

"Par. 277. Appeals to Supreme Court—Effect on orders.—Appellate jurisdiction is hereby conferred upon the Supreme Court in this State to review the action of said Commission in making any order, or orders, under this act.[1] Such appeal may be taken by any person, firm or corporation, shown by the record to be interested therein, in the same manner and time as appeals are allowed by law from other orders of the Corporation Commission. Said orders so appealed from shall not be superseded by the mere fact of such appeal being taken, but shall be and remain in full force and effect until legally suspended or set aside by the Supreme Court. Laws 1915, ch. 25, par. 7.

"Par. 278. Violation—Penalties.—In addition to any penalty that may be imposed by the Corporation Commis-

[1] Sections 271-279 of this title.

sion for contempt, any person, firm, or corporation, or any officer, agent or employee thereof, directly or indirectly violating the provisions of this act,[1] shall be guilty of a misdemeanor, and upon conviction thereof, in a court of competent jurisdiction, shall be punished by a fine in any sum not to exceed five thousand dollars ($5,000.00), or by imprisonment in the county jail not to exceed thirty (30) days, or by both fine and imprisonment. Laws 1915, ch. 25, par. 8.

"Par. 279. Partial invalidity.—The invalidity of any section, sub-division, clause or sentence of this act[1] shall not in any manner affect the validity of the remaining portion thereof. Laws 1915, ch. 25, par. 10.

OKLAHOMA STATUTES CUMULATIVE SUPPLEMENT 1949

Title 52, Sections 84 to 127.2

General Provisions

"Pars. 84-86. *Repealed. Laws 1947, p. 327, Par. 6.*—Amendment prior to repeal: Laws 1945, pp. 155, 156, Pars. 1-3.

"Par. 86.1. *Definitions.*—For the purposes of this Act,[2]

(a) The term "Commission" shall mean the Corporation Commission;

(b) The word "Person" shall include any individual, copartnership, corporation, common law or statutory trust or association of whatever character;

(c) The term "Common Source of Supply" shall compromise and include that area which is underlaid or which, from geological or other scientific data, or from drilling operations, or other evidence, appears to be underlaid, by a common accumulation of oil or gas or both; provided, that, if any such area is underlaid, or appears from geological or other scientific data, or from drilling operations, or other evidence, to be underlaid by more than one common accumulation of oil or gas or both, separated from

[1] Sections 271-279 of this title.

[2] Sections 86.1-86.5 of this title.

each other by a strata of earth and not connected with each other, then such area, as to each said common accumulation of oil or gas or both, shall be deemed a separate common source of supply;

(d) The term "Owner" shall mean a person who has the right to drill into and to produce from any common source of supply and to appropriate the production, either for himself or for himself and others;

(e) The word "Oil" shall mean crude petroleum oil, and any other hydrocarbons, regardless of gravity, which are produced at the well in liquid form by ordinary production methods;

(f) The word "Gas" shall mean all natural gas, including casinghead gas, and all other hydrocarbons not defined as oil in the sub-section above;

(g) The term "Producer" shall mean any person who, along or in association with another person or persons, shall have the right to drill into and produce from, or who has any interest in production from, any common source of supply in this State;

(h) The term "Operator" shall mean any producer of oil or gas who has drilled a well or wells into a common source of supply and is engaged in operating such well or wells for the purpose of producing oil or gas therefrom;

(i) The term "Taker" shall include any person, who, acting alone, or jointly with any person or persons, is directly or indirectly purchasing or transporting by any means whatsoever or otherwise removing oil or gas from any common source of supply in this State. Laws 1947, p. 326, Par. 1.

"Par. 86.2. *Waste of oil—Defined—Prohibited—Prevention—Protection of fresh water strata and oil or gas bearing strata.*—The term 'waste', as applied to the production of oil, in addition to its ordinary meaning, shall include economic waste, under-ground waste, including water encroachment in the oil or gas bearing strata; the use of reservoir energy for oil producing purposes by means or methods that unreasonably interfere with obtaining from the common source of supply the largest ultimate recovery

of oil; surface waste and waste incident to the production of oil in excess of transportation or marketing facilities or reasonable market demands. The production of oil in the State of Oklahoma in such manner and under such conditions as to constitute waste as in this Act.[1] defined is hereby prohibited, and the Commission shall have authority, and is charged with the duty, to make rules, regulations, and orders for the prevention of such waste, and for the protection of all fresh water strata and oil or gas bearing strata encountered in any well drilled for oil or gas. Laws 1947, p. 326, Par. 2.

"Par. 86.3. *Waste of gas—Meaning—Prevention—Prohibition—Protection of fresh water and oil or gas bearing strata.*—The term 'waste', as applied to gas, in addition to its ordinary meaning, shall include the inefficient or wasteful utilization of gas in the operation of oil wells drilled to and producing from a common source of supply; the inefficient or wasteful utilization of gas from gas wells drilled to and producing from a common source of supply; the production of gas in such quantities or in such manner as unreasonably to reduce reservoir pressure or unreasonably to diminish the quantity of oil or gas that might be recovered from a common source of supply; the escape, directly or indirectly, of gas from oil wells producing from a common source of supply into the open air in excess of the amount necessary in the efficient drilling, completion or operation thereof; waste incident to the production of natural gas in excess of transportation and marketing facilities or reasonable market demand; the escape, blowing or releasing, directly or indirectly, into the open air, of gas from wells productive of gas only, drilled into any common source of supply, save only such as is necessary in the efficient drilling and completion thereof; and the unnecessary depletion or inefficient utilization of gas energy contained in a common source of supply. In order to prevent the waste or to reduce the dissipation of gas energy contained in a common source of supply, in addition to its other powers in respect thereof, the Commission shall have the

[1] Sections 86.1-86.5 of this title.

authority to limit the production of gas from wells producing gas only to a percentage of the capacity of such wells to produce. The production of gas in the State of Oklahoma in such manner and under such conditions as to constitute waste as in this Act[1] defined is hereby prohibited, and the Commission shall have authority and is charged with the duty to make rules, regulations, and orders for the prevention of such waste and for the protection of all fresh water strata and oil or gas bearing strata encountered in any well drilled for gas. Laws 1947, p. 327, Par. 3.

"Par. 86.4. *Common source of supply—Orders, rules and regulations.*—The Commission is hereby empowered after notice of hearing to make all such orders, rules and regulations applicable to each common source of supply as it may find to be necessary or proper and to make general orders, rules and regulations applicable alike to all common sources of supply in the State. It shall not be necessary to publish such order, rule or regulation, after its adoption or promulgation by the Commission, before it shall go into effect, nor shall it be necessary to publish any such order, rule or regulation in each subsequent annual report of the Commission. Provided, that the Corporation Commission shall not under the provisions of this Act[1] make any order establishing a well spacing or drilling unit. Laws 1947, p. 327, Par. 4.

"Par. 86.5. *Procedural requirements.*—This Act[1] shall be subject to all of the procedural requirements contained in Sections 84 to 135, inclusive, Title 52, Oklahoma Statutes, 1941, including the right of appeal to the Supreme Court of the State on the part of any person aggrieved by any action of the Commission under and pursuant to this Act. Laws 1947, p. 327, Par. 5.

"Par. 87. *Repealed. Laws 1947, p. 331, Par. 2.* Amendment prior to repeal: Laws 1945, p. 157, Par. 4.

"Par. 87.1. *Common Source of supply of oil—Well spacing and drilling units.*—Whenever the production from any common source of supply of oil or natural gas in this State

[1] Sections 86.1-86.5 of this title.

can be obtained only under conditions constituting waste or drainage not compensated by counter-drainage, then any person having the right to drill into and produce from such common source of supply may, except as otherwise authorized or in this Act provided, take therefrom only such proportion of the oil or natural gas that may be produced therefrom without waste or without such drainage as the productive capacity of the well or wells of any such person considered with the acreage properly assignable to each such well bears to the total productive capacities of the wells in such common source of supply considered with the acreage properly assignable to each well therein.

Establishment of units. (a) To prevent or to assist in preventing the various types of waste of oil or gas prohibited by statute, or any of said wastes, or to protect or assist in protecting the correlative rights of interested parties, the Commission, upon a proper application and notice given as hereinafter provided, and after a hearing as provided in said notice, shall have the power to establish well spacing and drilling units of specified and approximately uniform size and shape covering any common source of supply, or prospective common source of supply, or oil or gas within the State of Oklahoma. Such order establishing well spacing or drilling units for a common source of supply may be entered after a hearing upon the petition of any person owning an interest in the minerals in lands embraced within such common source of supply, or the right to drill a well for oil or gas on the lands embraced within such common source of supply, or on the petition of the Conservation Officer of the State of Oklahoma. When such a petition is filed with the Commission, the Commission shall give at least fifteen (15) days' notice of the hearing to be held upon such petition by one publication at least fifteen (15) days prior to said hearing, in some newspaper of general circulation printed in Oklahoma City, Oklahoma, and by one publication, at least fifteen (15) days prior to the date of said hearing, in some newspaper printed in the county, or in each county, if there be more than than one, in which the lands embraced within the applica-

tion are situated. Except as to the notice of hearing on such a petition, the procedural requirements of Sections 84 to 135, inclusive, of Title 52, Oklahoma Statutes of 1941, shall govern all proceedings and hearing provided for by this section.

Acreage of unit—Order establishing. (b) In establishing a well spacing or drilling unit for a common source of supply thereunder, the acreage to be embraced within each unit and the shape thereof shall be determined by the Commission from the evidence introduced at the hearing, and the following facts, among other things, shall be material; (1) The lands embraced in the actual or prospective common source of supply (2) the plan of well spacing then being employed or contemplated in said source of supply; (3) the depth at which production from said common source of supply has been or is expected to be found; (4) the nature and character of the producing or prospective producing formation or formations; (5) any other available geological or scientific data pertaining to said actual or prospective source of supply which may be probative value to said Commission in determining the proper spacing and well drilling unit therefor, with due and relative allowance for the correlative rights and obligations of the producers and royalty owners interested therein.

The order establishing such spacing or drilling units shall set forth: (1) the outside boundaries of the surface area included in such order; (2) the size, form, and shape of the spacing or drilling units so established; (3) the drilling pattern for the area, which shall be uniform; and (4) the location of the permitted well on each such spacing or drilling unit. To such order shall be attached a plat upon which shall be indicated the foregoing information. Subject to other provisions of this Act, the order establishing such spacing or drilling units shall direct that no more than one (1) well shall thereafter be produced from the common source of supply on any unit so established, and that the well permitted on that unit shall be drilled at the location thereon as prescribed by the Commission, with such exception as may be reasonably necessary

where it is shown, upon application, notice and hearing in conformity with the procedural requirements of Sections 84 to 135, inclusive, Title 52, Oklahoma Statutes, 1941, and the Commission finds that any such spacing unit is located on the edge of a pool and adjacent to a producing unit, or for some other reason that to require the drilling of a well at the prescribed location on such spacing unit would be inequitable or unreasonable. Whenever such an exception is granted, the Commission shall adjust the allowable production for said spacing unit and take such other action as may be necessary to protect the rights of interested parties.

Decrease of size of units—Additional wells—Enlargement of area—Size of units when oil within 9990 feet of surface. (c) The Commission shall have jurisdiction upon the filing a proper application therefor, and upon notice given as provided in sub-section (a) above, to decrease the size of the well spacing units or to permit additional wells to be drilled within the established units, upon proper proof at such hearing that such modification or extension of the order establishing drilling or spacing units will prevent or assist in preventing the various types of wastes prohibited by statute, or any of said wastes, or will protect or assist in protecting the correlative rights of persons interested in said common source of supply, or to enlarge the area covered by the spacing order, if such proof discloses that the development or the trend of development indicates that such common source of supply underlies an area not covered by the spacing order. The Commission shall not establish well spacing units of more than forty (40) acres in size covering common sources of supply of oil the top of which lies less than 9990 feet below the surface as determined by the original or discovery well in said common source of supply.

Violations or order—Separately owned tracts or undivided interests—Pooling Costs. (d) The drilling of any well or wells into any common source of supply for the purpose of producing oil or gas therefrom, after a spacing order has been entered by the Commission covering such

common source of supply, at a location other than that fixed by said order is hereby prohibited. The drilling of any well or wells into a common source of supply, covered by a pending spacing application, at a location other than that approved by a special order of the Commission authorizing the drilling of such well, is hereby prohibited. The operation of any well drilled in violation of any spacing so entered is also hereby prohibited. When two (2) or more separately owned tracts of land are embraced within an established spacing unit, or where there are undivided interests separately owned, or both such separately owned tracts and undivided interests embraced within such established spacing unit, the owners thereof may validly pool their interests and develop their lands as a unit. Where, however, such owners have not agreed to pool their interests, and where one such separate owner has drilled or proposes to drill a well on said unit to the common source of supply, the Commission, to avoid the drilling of unnecessary wells, or to protect correlative rights, shall, upon a proper application therefor and a hearing thereon, require such owners to pool and develop their lands in the spacing unit as a unit. All orders requiring such pooling shall be made after notice and hearing, and shall be upon such terms and conditions as are just and reasonable and will afford to the owner of such tract in the unit the opportunity to recover or receive without unnecessary expense his just and fair share of the oil and gas. The portion of the production allocated to the owner of each tract or interests included in a well spacing unit formed by a pooling order shall, when produced, be considered as if produced by such owner from the separately owned tract or interest by a well drilled thereon. Such pooling order of the Commission shall make definite provisions for the payment of cost of the development and operation, which shall be limited to the actual expenditure required for such purpose not in excess of what are reasonable, including a reasonable charge for supervision. In the event of any dispute relative to such costs, the Commission shall determine the proper costs after due notice to interested

parties and a hearing thereon. The operator of such unit, in addition to any other right provided by the pooling order or orders of the Commission, shall have a lien on the mineral leasehold estate or rights owned by the other owners herein and upon their shares of the production from such unit to the extent that costs incurred in the development and operation upon said unit are a charge against such interest by order of the Commission or by operation of law. Such liens shall be separable as to each separate owner within such unit, and shall remain liens until the owner or owners drilling or operating the well have been paid the amount due under the terms of the pooling order. The Commission is specifically authorized to provide that the owner or owners drilling, or paying for the drilling, or for the operation of a well for the benefit of all shall be entitled to production from such well which would be received by the owner, or owners, for whose benefit the well was drilled or operated, after payment of royalty, until the owner or owners drilling or operating the well have been paid the amount due under the terms of the pooling order or order settling such dispute. No part of the production or proceeds accruing to any owner of a separate interest in such unit shall be applied toward payment of any cost properly chargeable to any other interest in said unit.

For the purpose of this Act[1] the owner, or owners, of oil and gas rights in and under an unleased tract of land shall be regarded as a lessee to the extent of a seven-eighths (7/8) interest in and to said rights and a lessor to the extent of the remaining one-eighth interest therein. Should the owners of separate tracts or interests embraced within a spacing unit fail to agree upon a pooling of their interests and the drilling of a well on the unit, and should it be established by final, unappealable judgment of a court of competent jurisdiction that the Commission is without authority to require pooling as provided for herein, then subject to all other applicable provisions of this Act, the owner of each tract or interest embraced within

[1] This section.

a spacing unit may drill on his separately owned tract, and the allowable production therefrom shall be that portion of the allowable for the full spacing unit as the area of such separately owned tract bears to the full spacing unit.

In the event a producing well, or wells, are completed upon a unit where there are, or may thereafter be, two (2) or more separately owned tracts, any royalty owner or group of royalty owners holding the royalty interest under a separately owned tract included in such spacing unit shall share in the one-eighth (⅛) of all production from the well or wells drilled within the unit or in the gas well rental provided for in the lease covering such separately owned tract or interest in lieu of the customary fixed royalty, in the proportion that the acreage of their separately owned tract or interest bears to the entire acreage of the unit; provided, where a lease covering any such separately owned tract or interest included within a spacing unit stipulates a royalty in excess of one-eighth (⅛) of the production, or said lease shall be subject to an overriding royalty, to production payment or other obligation, then the lessee of said lease out of his share of the working interests from the well drilled on said unit, shall sustain and pay said excess royalty, overriding royalty, or production payment, and therefrom meet any other obligation due in respect to the separately owned tract or interest held by him. Laws 1947, p. 328, Par. 1.

"Pars. 88, 89. *Repealed. Laws 1947, p. 331, Par. 1.*

"Par. 90. *Repealed. Laws 1947, p. 327, Par. 6.* Amendment prior to repeal: Laws 1945, p. 160, Par. 5. Orders, rules and regulations concerning common source of supply, see section 86.4 of this title.

"Par. 113. *Appeals—Power of Supreme Court—Supersedeas—Bond.* Proceedings for review.—Application of Moran, Okl., 200 P. 2d 758.

"Par. 121. *Director of Conservation—Oath and bond—Tenure—Salary—Duties.*—There is hereby created the office of Director of Conservation, which shall be filled as hereinafter provided. Said Director shall, before he enters

upon the duties of his office, take and subscribe to the Constitutional Oath of Office prescribed for State Officials, and shall give a bond to the State of Oklahoma in the sum of Ten Thousand Dollars ($10,000.00) with surety to be approved by the Commission conditioned that he will honestly and faithfully perform his duties, and that he will pay to the State, in the manner prescribed by law, all money which comes into his hand by virtue of such office. The tenure of his office shall be at the pleasure of the Commission. The Director shall receive a salary to be fixed by the Commission not to exceed the sum of Six Thousand Six Hundred Dollars ($6,600.00) per annum, payable monthly, and shall possess such powers and authority, and be charged with such duties as provided in this Act,[1] and in addition thereto he shall investigate all charges and complaints of violations of this Act, and any orders, rules and regulations of the Commission, and report all such violations to the Commission and to the Conservation Attorney, and he shall file charges and complaints with the Commission, or other proper tribunal or court, of all such violations. He shall obey and enforce all orders of the Commission. As amended Laws 1947, p. 332, Par. 4.

"Par. 124. *Conservation Attorney—Tenure—Salary—Duties.*—There is hereby created the Office of Conservation Attorney, which office shall be filled as hereinafter provided. The Conservation Attorney shall receive a salary to be fixed by the Commission not exceeding the sum of Six Thousand Six Hundred Dollars ($6,600.00) per annum, payable monthly. Said attorney shall, before he enters upon the duties of his office, take and subscribe to the Constitutional Oath of office prescribed for the State Officials. The tenure of his office shall be at the pleasure of the Commission. The Conservation Attorney shall be the legal advisor to the Commission, Director of Conservation and Field Supervisors in all matters arising under this Act.[1] He shall appear for the State, the Director and Field Supervisors in all proceedings under this Act before the Commission, shall file and prosecute charges and com-

1 Sections 84-135 of this title.

plaints of violations of this Act, and of any orders, rules and regulations of the Commission made hereunder, shall file and prosecute contempt proceedings, and proceedings as for contempt arising hereunder, and shall appear for the State, the Director and Field Supervisors, and prosecute or defend in their behalf all actions and proceedings in the courts of the United States in all courts of this State arising out of the enforcement of this Act, or any orders, rules or regulations of the Commission made hereunder; provided, however, that as to any proceeding authorized by this Act which shall be commenced and prosecuted by any producer or taker of oil, or other person, the Conservation Attorney shall be permitted to assist in such proceeding, but shall conduct the same only upon the request of the person instituting the same; and provided further, that as to any criminal action, in the district or county courts of this State, arising out of the enforcement of this Act or any orders, rules, or regulations of the Commission, the Conservation Attorney shall not supersede but shall assist the County Attorney in the prosecution thereof; and provided further, that any producer or taker of oil, or other interested person, shall be permitted to assist, through counsel, in any action or proceeding arising out of the enforcement of this Act, or any orders, rules or regulations made by the Commission hereunder.

In addition to his other duties, the Conservation Attorney shall be the legal advisor to the State Fuel Inspector, and shall appear for the State and said State Fuel Inspector in all proceedings before the Commission, and when requested, by the State Fuel Inspector, or the Commission, so to do, shall appear in any court in this State, and shall prosecute and defend all actions and proceedings in connection with the enforcement of the laws of the State of Oklahoma and the rules of the Commission relating to the inspection of petroleum products as set forth in Article 6, of Chapter 59, Oklahoma Statutes 1931, and the Acts amendatory thereof.[2] As amended Laws 1947, p. 332, Par. 5.

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[2] Section 321 et seq. of this title.

"Par. 124.1. *Assistant Conservation Attorney.*—There is hereby created the office of Assistant Conservation Attorney, which office shall be filled as hereinafter provided. The Assistant Conservation Attorney shall receive a salary to be fixed by the Commission not exceeding the sum of Three Thousand Six Hundred Dollars ($3,600.00) per annum, payable monthly. The tenure of his office shall be at the pleasure of the Commission, and he shall assist the Conservation Attorney in performing all of the duties imposed upon the Conservation Attorney by Section 5 hereof.[1] The Assistant Conservation Attorney shall have his salary and necessary expenses paid from the Conservation Fund. Laws 1947, p. 333, Par. 6.

"Par. 125. *Appointments—Made by Commission—Tenure.*—The Conservation Officer and Conservation Attorney shall be appointed by the Corporation Commission and shall hold office at its pleasure. As amended Laws 1943, p. 126, Par. 1.

Effective on approval April 3, 1943.

"Par. 126. *Field supervisors.*—The Corporation Commission may, at any time which it finds that the public interest will be subserved thereby, appoint not more than Fifteen (15) deputies, to be known as Field Supervisors, who shall have and exercise all the powers granted to them in this Act,[2] and who shall be charged with the performance of all the duties assigned to them by the Director of Conservation, and shall, when so ordered by the Commission, enforce any order, rule, or regulation, or serve any writ or process issued by the Commission; and the number shall be increased or decreased as the Commission shall order; provided, however, that not more than Fifteen (15) Field Supervisors shall at any time be appointed and act as such. When so appointed the salaries of said Field Supervisors shall be fixed by the Commission at not to exceed Three Thousand Six Hundred Dollars ($3,600.00) each, per annum, payable monthly; provided that, said Field Supervisors shall have had at least five (5) years

[1] Section 124 of this title.

[2] Sections 84-135 of this title.

practical experience in the production of oil or gas, or be qualified engineers or geologists or have had five (5) years' experience as a deputy conservation officer. As amended Laws 1943, P. 126, Par. 2; Laws 1945, p. 161, Par. 1; Laws 1947, p. 333, Par. 7.

"Par. 127. *Engineers or geologists—Assistant director—Statisticians—Reporters—Stenographers and clerks.*—The Corporation Commission may employ four (4) oil and gas engineers or petroleum geologists who shall be either a graduate or registered engineer or geologist, one of whom shall be designated senior engineer or geologist, and be paid a salary of not to exceed Four Thousand Five Hundred Dollars ($4,500.00) per annum and the other three of whom shall be paid a salary of Four Thousand Two Hundred Dollars ($4,200.00), each per annum; one (1) assistant director of conservation and office manager who shall be paid a salary of not to exceed Four Thousand Two Hundred Dollars ($4,200.00), per annum, and who shall have had at least five (5) years' experience in the oil and/or gas business, or five years' experience as an employee of the conservation department. One (1) assistant director of conservation and field supervisor, who shall receive a salary of not to exceed Four Thousand Two Hundred Dollars ($4,200.00) per annum, and who shall have had five (5) years' experience in the oil and/ gas business or five (5) years' experience as an employee of the Conservation department; three (3) statisticians who shall be paid a salary of not to exceed three thousand Dollars ($3,000.00) each per annum; two (2) court reporters, who shall be paid a salary of not to exceed Two Thousand Four Hundred Dollars ($2,400.00) per annum; two (2) stenographers (who shall serve as secretary to the Director of Conservation and to the Conservation Attorney) who shall receive a salary of not to exceed Two Thousand Two Hundred and Twenty Dollars ($2,220.00) each per annum; and six (6) stenographers and/or clerks, who shall receive a salary of not to exceed Two Thousand Dollars ($2,00.00) each per annum. The salary of said employees shall be fixed by the Corporation Commission and shall be payable monthly

ing those wherein is sought the issuance and promulgation of orders, rules or regulations by the Commission under the provisions of an Act of the Legislature approved February 11, 1915, entitled "An Act defining and prohibiting the waste of crude oil or petroleum, providing for the equitable taking of the same from the ground and conferring authority on the Corporation Commission, prescribing the penalty for the violation of this Act and declaring an emergency," and of any amendments thereto,[1] but any and all such proceedings shall continue to final decision or action therein by the Commission, and all further proceedings, hearings and all orders, rules and regulations had or made therein by the Commission, and all enforcement thereof shall be under and subject to the terms and provisions of this Act. All existing orders, rules and regulations of the Commission heretofore made and issued under the provisions of aforesaid Act of the Legislature, approved February 11, 1915, and of any amendments thereto, until repealed, vacated or modified by order of the Commission, or of the Supreme Court on appeal therefrom, shall continue and remain in full force and effect and shall be enforced in the same manner and to like extent as if this Act had not been enacted, but all further proceedings and hearings in any proceedings heretofore brought and now pending before the Commission, and the institution, prosecution and hearing of any proceedings hereafter brought before the Commission in connection with any such existing orders, rules or regulations of the Commission shall be governed by the rules of procedure in this Act provided and/or that shall be issued by the Commission in pursuance of the provisions of this Act. Laws 1933, ch. 131, p. 301, par. 49.

"Par. 136. Application of procedural requirements—Right of appeal—Rules and regulations.—This Act[2] is subject to all of the procedural requirements of Chapter 131, Section Laws of Oklahoma, 1933,[3] including the right of appeal to the Supreme Court of the State on the part

[1] Sections 271-279 of this title.

[2] Sections 85-87 and 136-138 of this title.

[3] Sections 84-135 of this title.

of any person aggrieved by any action under said subsections, and the Corporation Commission is hereby vested with specific power and jurisdiction to establish rules and regulations for the carrying out and enforcement of all of the provisions of this Act. Laws 1935, p. 236, par. 4.

"Par. 137. Powers of cities and towns not limited or restricted.—Nothing in this Act[1] is intended to limit or restrict the rights of cities and towns governmental corporate powers to prevent oil or gas drilling therein nor under its police powers to provide its own rules and regulations with reference to well-spacing units or drilling or production which they may have at this time under the general laws of the State of Oklahoma. Laws 1935, p. 236, par. 5.

"Par. 138. Partial invalidity, effect of.—If any Section, paragraph, sentence or phrase of this Act[2] shall be declared unconstitutional or void for any reason, by any court of final jurisdiction, such Decision shall not in any way invalidate or affect any other Section, paragraph, sentence or phrase of this Act, but the same shall continue in full force and effect. Laws 1935, p. 236, par. 6.

Interstate Compacts

"Par. 201. Compacts with other states authorized—Objectives—Fact finding agency—Uniform conservation and tax laws.—The Governor, or such Representative as he may appoint, is authorized to meet with Representatives of the Governors of other petroleum-producing states, and of the United States, for the purpose of agreeing upon a compact among such States effecting the following objectives:

"(a). Establishment of a joint state and federal fact-finding agency to consist of one Representative appointed by the Governor of each compacting state, and one Representative of the United States as Congress or the President shall direct. Said agency shall make periodic findings, subject to the approval and modification by the Presi-

[1] Sections 85-87 and 136-138 of this title.

[2] Sections 85-87 and 136-138 of this title.

dent, of the demand for petroleum to be produced within the United States, for withdrawals from storage, and for petroleum and products thereof to be imported. It shall thereupon, subject to concurrence of Representatives of compacting states capable of together producing two-thirds of the demand for domestic production so found, and approval and modification by the President, determine the part thereof allowable as production within each petroleum-producing state.

"(b). Voluntary regulation of production by each compacting State within its own borders in accordance with said determination of the joint fact-finding agency, to the extent that and in such manner as the laws of each State may authorize.

"(c). Formulation by the joint agency of uniform conservation measures and tax laws which it shall recommend to the compacting states, and exercise by said agency of such incidental powers as may be agreed upon. Laws 1935, p. 240, par. 1.

"Par. 202. Interstate compacts—When binding.—No compact made under the authority of this Act [1] shall bind this State unless and until:

"(a). Said compact shall be ratified by the Legislatures of two of the States of Texas, California, Kansas and New Mexico, and the Legislature of this State, and Congress shall consent thereto.

"(b). Congress shall make provision for the control and limitation of importations in accordance with the findings referred to in Section 1.[2]

"(c). Congress shall provide for the control of interstate movements of petroleum produced or withdrawn from storage in violation of the laws and valid regulations of the several states, and products of such petroleum.

"(d). Congress shall provide for the control of interstate movements of petroleum produced in any State in excess of the determination, referred to in Section 1, of allowable production within said State as approved by the

[1] This section and section 201 of this title.
[2] Section 201 of this title.

President, and products of such petroleum. Laws 1935, p. 240, par. 2.

"Par. 203. Interstate compact ratified and confirmed.—The "Interstate Compact to Conserve Oil and Gas" entered into by the Governor of this State and the Representatives of certain other oil producing States at Dallas, Texas, on the 16th day of February, 1935, is hereby ratified, approved and confirmed by the State of Oklahoma. Laws, 1935, p. 242, par. 1.

"Par. 204. Terms and provisions of compact.

"An Interstate Compact to Conserve Oil and Gas.

Article I

"This agreement may become effective within any compacting State at any time as prescribed by that State, and shall become effective within those States ratifying it whenever any three of the States of Texas, Oklahoma, California, Kansas, and New Mexico have ratified and Congress has given its consent. Any oil-producing State may become a party hereto as hereinafter provided.

Article II

"The purpose of this compact is to conserve oil and gas by the prevention of physical waste thereof from any cause.

Article III

"Each State bound hereby agrees that within a reasonable time it will enact laws, or if laws have been enacted, then it agrees to continue the same in force, to accomplish within reasonable limits the prevention of:

"(a) The operation of any oil well with an inefficient gas-oil ratio.

"(b) The drowning with water of any stratum capable of producing oil or gas, or both oil and gas, in paying quantities.

"(c) The avoidable escape into the open air or the wasteful burning of gas from a natural gas well.

"(d) The creation of unnecessary fire hazards.

"(e) The drilling, equipping, locating, spacing or operating of a well or wells so as to bring about physical waste of oil or gas or loss in the ultimate recovery thereof.

"(f) The inefficient, excessive or improper use of the reservoir energy in producing any well.

"The enumeration of the foregoing subjects shall not limit the scope of the authority of any State.

Article IV

"Each State bound hereby agrees that it will, within a reasonable time, enact statutes, or if such statutes have been enacted then that it will continue the same in force, providing in effect that oil produced in violation of its valid oil and/or gas conservation statutes or any valid rule, order or regulation promulgated thereunder, shall be denied access to commerce; and providing for stringent penalties for the waste of either oil or gas.

Article V

"It is not the purpose of this compact to authorize the States joining herein to limit the production of oil or gas for the purpose of stabilizing or fixing the price thereof, or create or perpetuate monopoly, or to promote regimentation, but is limited to the purpose of conserving oil and gas and preventing the avoidable waste thereof within reasonable limitations.

Article VI

"Each State joining herein shall appoint one representative to a commission hereby constituted and designated as The Interstate Oil Compact Commission, the duty of which said commission shall be to make inquiry and ascertain from time to time such methods, practices, circumstances and conditions as may be disclosed for bringing about conservation and the prevention of physical waste of oil and gas, and at such intervals as said commission deems beneficial it shall report its findings and recommendations to the several States for adoption or rejection.

"The commission shall have power to recommend the coordination of the exercise of the police powers of the several States within their several jurisdictions to promote the maximum ultimate recovery from the petroleum reserves of said States, and to recommend measures for the maximum ultimate recovery of oil and gas. Said commission shall organize and adopt suitable rules and regulations for the conduct of its business.

"No action shall be taken by the commission except: (1) by the affirmative votes of the majority of the whole number of the compacting States, represented at any meeting, and (2) by a concurring vote of a majority in interest of the compacting States at said meeting, such interest to be determined as follows: Such vote of each State shall be in the decimal proportion fixed by the ratio of its daily average production during the preceding calendar half-year to the daily average production of the compacting States during said period.

Article VII

"No State by joining herein shall become financially obligated to any other State, nor shall the breach of the terms hereof by any State subject such State to financial responsibility to the other States joining herein.

Article VIII

"This compact shall expire September 1, 1937. But any State joining herein may, upon (60) days' notice, withdraw herefrom.

"The representatives of the signatory States have signed this agreement in a single original which shall be deposited in the archives of the Department of State of the United States, and a duly certified copy shall be forwarded to the Governor of each of the signatory States.

"This compact shall become effective when ratified and approved as provided in Article I. Any oil-producing State may become a party hereto by affixing its signature to a counterpart to be similarly deposited, certified and ratified.

"Done in the City of Dallas, Texas, this sixteenth day of February, 1935.

E. W. MARLAN, The Governor of the State of Oklahoma;
JAMES V. ALLRED, The Governor of the State of Texas;
R. L. PATTERSON, For the State of California;
FRANK VESELY, E. H. WELLS, HUGH BURCH, HIRAM M. DOW, For the State of New Mexico.

"The following representatives recommend to their respective Governors and Legislatures the ratification of the foregoing agreement::

JOHN W. OLVEY, of Arkansas;
WARWICK M. DOWNING, of Colorado;
WILLIAM BELL, of Illinois;
GORDON F. VAN EENANAAM, GERALD COTTER of Michigan;
RALPH J. PRYOR, E. B. SHAWVER, T. C. JOHNSON of Kansas.

Laws 1935, p. 242, par. 2; Laws 1939, p. 346, par. 2; Laws 1941, p. 212, par. 2.

"Par. 205. Governor as official representative of State—Powers and duties—Assistant representatives.—The Governor is hereby designated as the official representative of the State of Oklahoma on "The Interstate Oil Compact Commission" provided for in the compact herein authorized to be extended. The Governor shall exercise and perform for the State of Oklahoma all the powers and duties imposed by the aforesaid compact upon a representative to "The Interstate Oil Compact Commission;" provided, that he shall have the authority to appoint an assistant representative who shall act as the official representative of the State of Oklahoma on "The Interstate Oil Compact Commission" when the authority to so act is delegated to him by the Governor. In addition said assistant representative shall perform such other duties as the Governor may designate which are necessary to enable the State of Oklahoma to fully cooperate in accomplishing the objects of office prescribed by the Constitution which shall be filed with the Secretary of State, and he shall receive for his services the sum of Fifteen ($15.00) Dollars, for each day he is engaged in the performance of

the duties of his office. Laws 1935, p. 244, par. 3; Laws 1935, p. 241, par. 1; Laws 1939, p. 349, par. 5; Laws 1941, p. 214, par. 5.

"Par. 206. Clerical, technical and legal assistants—Expenses—Office.—The assistant representative referred to in Section 5 of this Act [1] is hereby authorized with the consent of the Governor to employ such clerical, technical and legal assistants as may be necessary for him to properly perform the duties assigned him, and to incur such other expenses as may be necessary to enable the State of Oklahoma to fully cooperate in accomplishing the objects of "The Interstate Compact to Conserve Oil and Gas." Said assistant representative and his assistants, and the Governor when acting in his capacity as official representative of the State of Oklahoma on "The Interstate Oil Compact Commission," shall receive their actual and necessary traveling expenses when away from the State Capitol in the performance of their duties, which shall be paid from the special fund hereinafter created. The State Board of Affairs shall provide and furnish an office in the State Capitol for said assistant representative. Laws 1935, p. 241, par. 2; Laws 1939, p. 349, par. 6; Laws 1941, p. 214, par. 6.

"Par. 207. Interstate oil compact fund—Purposes for which used—Disposition of unexpended balance.—There is hereby created in the office of the State Treasurer a special fund to be known as "The Interstate Oil Compact Fund of Oklahoma" and all moneys which accrue to said fund are hereby appropriated for the purpose of paying the compensation of the assistant representative referred to in Section 5 of this Act; [2] the compensation of such clerical, technical and legal assistants as he may, with the consent of the Governor, employ; the actual and necessary traveling expenses of the assistant representative and his employees and of the Governor when traveling in his capacity as official representative of the State of Oklahoma on "The Interstate Oil Compact Commission;" all items

[1] Section 205 of this title.
[2] Section 205 of this title.

of office expense including the cost of office supplies and equipment, such contributions as the Governor shall deem proper to pay to the Interstate Oil Compact Commission to defray its expenses; and such other necessary expenses as may be incurred in enabling the State of Oklahoma to fully cooperate in accomplishing the objects of "The Interstate Compact to Conserve Oil and Gas." Said fund shall be disbursed by the State Treasurer upon warrants issued by the State Auditor upon sworn itemized claims approved by said assistant representative and the Governor; provided, that if at the end of any fiscal year any part of said special fund shall remain unexpended, such balance shall be transferred by the State Treasurer to and become a part of the Conservation Fund of the State for the ensuing fiscal year. Laws 1935, p. 241, par. 3; Laws 1939, p. 350, par. 7; Laws 1941, p. 214, par. 7.

"Par. 208. Duration of Act—Withdrawal from compact—Credit of funds to conservation fund.—The provisions of this Act shall be in force and effect so long as the State of Oklahoma shall be and remain a party to "The Interstate Compact to Conserve Oil and Gas." In the event the State of Oklahoma withdraws from said compact, the provisions of this Act shall cease to operate and any unencumbered moneys in "The Interstate Oil Compact Fund of Oklahoma" shall be credited to the Conservation Fund of the State of Oklahoma and be used for the purposes for which said fund is created. Laws 1935, p. 242, par. 4; Laws 1939, p. 350, par. 8; Laws 1941, p. 215, par. 8.

"Par. 209. Notice of passage and approval of act.—Notice of the passage and approval of this Act and of the Compact herein shall be given by the Governor of Oklahoma to the Governors of Texas, California, New Mexico, Arkansas, Colorado, Kansas, Illinois and Michigan; said States being represented during the consideration of said compact, and to the Department of State of the United States: said notice to be effected by the mailing of a certified copy of this Act[1] to the above enumerated officials. Laws 1935, p. 244, par. 4.

[1] Sections 203-205 and 209-211 of this title.

"Par. 210. Governor to declare effective date of compact.—It is hereby made the duty of the Governor of Oklahoma to ascertain and to declare by public proclamation the effective date of the terms and provisions of said compact, in accordance with the provisions of Article I thereof.[1] Laws 1935, p. 244, par. 5.

"Par. 211. Further extensions—Withdrawal from compact—Determination and necessary steps.—The Governor of Oklahoma is further authorized and empowered for and in the name of the State of Oklahoma to execute agreements for the further extension of the expiration date of the said The Interstate Compact to Conserve Oil and Gas and to determine if and when it shall be for the best interest of the State of Oklahoma to withdraw from said Compact upon sixty (60) days' notice as provided by the terms of the Compact. In the event he shall determine that this State should withdraw from said Compact he shall have full power and authority to give necessary notice and to take any and all steps necessary and proper to effect the withdrawal of the State of Oklahoma from said Compact. Laws 1935, p. 244, par. 6; L. 1939, p. 349, par. 4, Laws 1941, p. 214, par. 4.

Gas

"Par. 231. Ownership of gas.—All natural gas under the surface of any land in this state is hereby declared to be and is the property of the owners, or gas lessees, of the surface under which gas is located in its original state. Laws 1913, ch. 198, p. 439, par. 1.

"Par. 232. Drilling rights—Restrictions on output.—Any owner, or oil and gas lessee, of the surface, having the right to drill for gas shall have the right to sink a well to the natural gas underneath the same and to take gas therefrom until the gas under such surface is exhausted. In case other parties, having the right to drill into the common reservoir of gas, drill a well or wells into the same, then the amount of gas each owner may take therefrom shall be proportionate to the natural flow of his well

[1] Section 204 of this title.

or wells to the natural flow of the well or wells of such other owners of the state common source of supply of gas, such natural flow to be determined by any standard measurement at the beginning of each calendar month; provided, that not more than twenty-five per cent of the natural flow of any well shall be taken, unless for good cause shown, and upon notice and hearing the Corporation Commission may, by proper order, permit the taking of a greater amount. The drilling of a gas well or wells by any owner or lessee of the surface shall be regarded as reducing to possession his share of such gas as is shown by his well. Laws 1913, ch. 198, p. 440, par. 2.

"Par. 233. Sale of gas—Prices and amounts of gas to be taken—Delivery.—Any person, firm or corporation, taking gas from a gas field, except for purposes of developing a gas or oil field, and operating oil wells, and for the purpose of his own domestic use, shall take ratably from each owner of the gas in proportion to his interest in said gas, upon such terms as may be agreed upon between said owners and the party taking such, or in case they cannot agree at such a price and upon such terms as may be fixed by the Corporation Commission after notice and hearing; provided, that each owner shall be required to deliver his gas to a common point of delivery on or adjacent to the surface overlying such gas. Laws 1913, ch. 198, p. 440, par. 3.

"Par. 234. Misappropriation of gas—Liability for damage and penalties.—Any person, firm or corporation, taking more than his or its proportionate share of such gas, in violation of the provisions of this act,[1] shall be liable to any adjoining well owner for all damages sustained thereby and subject to a penalty for each violation not to exceed five hundred dollars ($500.00) and each day such violation is continued shall be a separate offense. Laws 1913, ch. 198, p. 441, par. 4.

"Par. 235. Misappropriation of gas—Criminal responsibility.—Any person or agent of a corporation, who takes gas, or aids or abets in the taking of gas, except as herein

[1] Sections 231-235 of this title.

provided, either directly or indirectly, as an individual officer, agent, or employee of any corporation, shall be guilty of grand larceny, and, upon conviction thereof, shall be sentenced to the penitentiary not to exceed five (5) years. Laws 1913, ch. 198, p. 441, par. 5.

"Par. 236. Waste prohibited.—The production of natural gas in the State of Oklahoma, in such manner, and under such conditions as to constitute waste, shall be unlawful. Laws 1915, ch. 197, par. 1.

"Par. 237. Waste defined.—The term waste, as used herein in addition to its ordinary meaning, shall include escape of natural gas in commercial quantities into the open air, the intentional drowning with water of a gas stratum capable of producing gas in commercial quantities, underground waste, the permitting of any natural gas well to wastefully burn and the wasteful utilization of such gas. Laws 1915, ch. 197, par. 2.

"Par. 238. Conservation of gas.—Whenever natural gas in commercial quantities, or a gas bearing stratum, known to contain natural gas in such quantity, is encountered in any well drilled for oil or gas in this state, such gas shall be confined to its original stratum until such time as the same can be produced and utilized without waste, and all such strata shall be adequately protected from infiltrating waters. Any unrestricted flow of natural gas in excess of two million cubic feet per twenty-four hours shall be considered a commercial quantity thereof; provided, that if in the opinion of the Corporation Commission, gas of a lesser quantity shall be of commercial value, said Commission shall have authority to require the conservation of said gas in accordance with the provisions of this act;[1] and provided, further, the gauge of the capacity of any gas well shall not be taken until such well has been allowed an open flow for the period of three days. Laws 1915, ch. 197, par. 3.

"Par. 239. Common source of supply—Excess gas supply—Apportionment and regulation to prevent waste.—Whenever the full production from any common source of

[1] Sections 236-247 of this title.

supply of natural gas in this state is in excess of the market demands, then any person, firm or corporation, having the right to drill into and produce gas from any such common source of supply, may take therefrom only such proportion of the natural gas that may be marketed without waste, as the natural flow of the well or wells owned or controlled by any such person, firm or corporation bears to the total natural flow of such common source of supply having due regard to the acreage drained by each well, so as to prevent any such person, firm or corporation securing any unfair proportion of the gas therefrom; provided, that the Corporation Commission may by proper order, permit the taking of a greater amount whenever it shall deem such taking reasonable or equitable. The said commission is authorized and directed to prescribe rules and regulations for the determination of the natural flow of any such well or wells, and to regulate the taking of natural gas from any or all such common sources of supply within the state, so as to prevent waste, protect the interests of the public, and of all those having a right to produce therefrom, and to prevent unreasonable discrimination in favor of any one such common source of supply as against another. Laws 1915, ch. 197, par. 4.

"Par. 240. 'Common purchaser'—Discrimination in purchases prohibited—Regulation of purchases.—Every person, firm or corporation, now or hereafter engaged in the business of purchasing and selling natural gas in this state, shall be a common purchaser thereof, and shall purchase all of the natural gas which may be offered for sale, and which may reasonably be reached by its trunk lines, or gathering lines without discrimination in favor of one producer as against another, in favor of any one source of supply as against another save as authorized by the Corporation Commission after due notice and hearing; but if any such person, firm or corporation, shall be unable to purchase all the gas so offered, then it shall purchase natural gas from each producer ratably. It shall be unlawful for any such common purchaser to discriminate between like grades and pressures of natural gas, or in favor

of its own production, or of production in which it may be directly or indirectly interested, either in whole or in part, but for the purpose of prorating the natural gas to be marketed, such production shall be treated in like manner as that of any other producer or person, and shall be taken only in the ratable proportion that such production bears to the total production available for marketing. The Corporation Commission shall have authority to make regulations for the delivery, metering and equitable purchasing and taking of all such gas and shall have authority to relieve any such common purchaser, after due notice and hearing, from the duty of purchasing gas of an inferior quality or grade. Laws 1915, ch. 197, par. 5.

"Par. 241. Enforcement of Act—Hearings before Corporation Commission.—Any person, firm or corporation, or the Attorney General, on behalf of the state may institute proceedings before the Corporation Commission, or apply for a hearing before said commission, upon any question relating to the enforcement of this Act;[1] and jurisdiction is hereby conferred upon said commission to hear and determine the same, said commission shall set a time and place when such hearing shall be had and give reasonable notice thereof to all persons or classes interested therein by publication in some newspaper or newspapers having general circulation in the state, and shall in addition thereto cause notice to be served in writing upon any person, firm or corporation, complained against in the manner now provided by law for serving summons in civil actions. In the exercise and enforcement of such jurisdiction said commission is authorized to summon witnesses, make ancillary orders, and use such mesne and final process including inspection and punishment as for contempt, analogous to proceedings under its control over public service corporations as now provided by law. Laws 1915, ch. 197, par. 6.

"Par. 242. Appeals to Supreme Court.—Appellate jurisdiction is hereby conferred upon the Supreme Court of this state to review the orders of said commission made under

[1] Sections 236-247 of this title.

this act.[1] Such appeal may be taken by any person, firm or corporation, shown by the record to be interested therein, in the same manner and time as appeals are allowed by law from other orders of the Corporation Commission. Said orders so appealed from, may be superseded by the commission or by the Supreme Court upon such terms and conditions as may be just and equitable. Laws 1915, ch. 197, par. 7.

"Par. 243. Corporation Commission—Authority to make rules and regulations.—The Corporation Commission shall have authority to make regulations for the prevention of waste of natural gas, and for the protection of all natural gas, fresh water, and oil bearing strata encountered in any well drilled for oil or natural gas, and to make such other rules and regulations, and to employ or appoint such agents, with the consent of the Governor, as may be necessary to enforce this act.[1] Laws 1915, ch. 197, par 8.

"Par. 244. Pipe line companies—Acceptance of act as prerequisite to right to operate.—Before any person, firm or corporation shall have, possess, enjoy or exercise the right of eminent domain, right of way, right to locate, maintain, construct or operate pipe lines, fixtures, or equipments belonging thereto or used in connection therewith, for the carrying or transportation of natural gas, whether for hire or otherwise, or shall have the right to engage in the business of purchasing, piping, or transporting natural gas, as a public service, or otherwise, such person, firm or corporation, shall file in the office of the Corporation Commission a proper and explicit authorized acceptance of the provisions of this act.[1] Laws 1915, ch. 197, par. 9.

"Par. 245. Mine Inspector—Duties unchanged.—Nothing contained in this act[1] shall be construed to interfere with any duties now imposed by law upon the Chief Mine Inspector of the state or his deputies. Laws 1915, ch. 197, par. 10.

"Par. 246. Partial invalidity—Effect.—The invalidity of any section, subdivision, clause, or sentence of this act[1]

[1] Sections 236-247 of this title.

shall not in any manner affect the validity of the remaining portion thereof. Laws 1915, ch. 197, par. 11.

"Par. 247. Violation—Penalties.—In addition to any penalty that may be imposed by the Corporation Commission for contempt, any person, firm or corporation, or any officer, agent or employee thereof, directly or indirectly violating the provisions of this act,[1] shall be guilty of a misdemeanor, and upon conviction thereof, in a court of competent jurisdiction, shall be punished by a fine in any sum not to exceed five thousand dollars ($5,000.00) or by imprisonment in the county jail not to exceed thirty (30) days, or by both such fine and imprisonment. Laws 1915, ch. 197, par. 12.

"Par. 271. Waste prohibited.—The production of crude oil or petroleum in the State of Oklahoma, in such manner and under such conditions as to constitute waste, is hereby prohibited. Laws 1915, ch. 25, par. 1.

"Par. 272. Production and sale regulated—Corporation Commission, authority of.—The taking of crude oil or petroleum from any oil bearing sand or sands in the State of Oklahoma at a time when there is not a market demand therefor at the well at a price equivalent to the actual value of such crude oil or petroleum is hereby prohibited, and the actual value of such crude oil or petroleum at any time shall be the average value as near as may be ascertained in the United States at retail of the by products of such crude oil or petroleum when refined less the cost and a reasonable profit in the business of transporting, refining and marketing the same, and the Corporation Commission of this State is hereby invested with the authority and power to investigate and determine from time to time the actual value of such crude oil or petroleum by the standard herein provided, and when so determined said Commission shall promulgate its findings by its orders duly made and recorded, and publish the same in some newspaper of general circulation in the State. Laws, 1915, ch. 25, par. 2.

"Par. 273. Waste defined—Regulations to prevent.—The term 'waste' as used herein, in addition to its ordi-

[1] Sections 236-247 of this title.

enforcement, as provided in the preceding section of this Act,[1] the Secretary of the Commission, in the name of the Commission and by him as its Secretary, shall issue a notice to the defendant or defendants named in such motion or petition, which said notice shall be addressed to the defendant or defendants in said petition, and shall state, (a) the filing of such motion or petition; (b) the order or orders, rule or rules, regulation or regulations of the Commission, or the provisions of this Act,[2] violations of which are charged therein; (c) the common source of supply in or with respect to which such violation has occurred or is occurring; (d) the date on which said motion or petition is set for hearing, which shall be on such date as shall be provided by order, rule or regulation of the Commission, but shall not be earlier than ten (10) days from the date of the issuance of such notice; and (e) a copy of said motion or petition filed in said cause shall be attached to said notice, and if any temporary order of enforcement shall have been made by the Commission in said proceedings, reference to such order shall be contained in said notice and a copy thereof shall be attached to said notice, in order that service of the same upon the defendant or defendants may be made at the same time as the service of said notice. Laws 1933, ch. 131, p. 290, par. 23.

"Par. 107. Process—Service—How made—Return.—Except as otherwise provided or authorized in this Act,[1] service of any notice, petition or other pleading, citation, summons, subpoena, order of the Commission of which service is required, and execution, commitment or other process, in any proceeding before the Commission under the provision of this Act, may be made by the Proration Umpire,[2] his assistant[3] or any deputy[4] to the Proration Umpire, or by any other person authorized and directed by order of the Commission to make such service, and such service may be made upon any person, firm, trust, asso-

1 Section 105 of this title.
2 Sections 84-135 of this title.
2 Changed to Conservation Officer. See section 81 of this title.
3 Changed to Assistant Conservation Officer. See section 81 of this title.
4 Changed to Deputy Conservation Officers. See Section 81 of this title.

ciation or corporation, required to be served, in the same manner as is provided for the service of summons in civil actions in the District Courts of the State, upon such persons, firms, trusts, associations, and corporations respectively. The officer or other person making any such service shall make his return thereof and file the same with the Secretary of the Commission. Said return shall show the time when the notice, pleading, citation, petition, summons, subpoena, order of the Commission, execution, commitment, or other process was received by him and the time and manner the same was served by him. Laws 1933, ch. 131, p. 291, par. 24.

"Par. 108. Oaths—Perjury—Punishment.—Every person who, having taken an oath that he will testify, declare or depose before the Commission, in any proceeding, or at any hearing before said Commission, authorized and provided for under the provisions of this Act,[1] shall wilfully and contrary to such oath state any material matter which he knows to be false, is guilty of perjury, and upon conviction shall be punished by imprisonment in the State penitentiary not more than five (5) years. Laws 1933, ch. 131, p. 291, par. 25.

"Par. 109. False verification of documents as perjury—Punishment.—Any person who shall verify under oath any report, map or drawing or other statement or document authorized or required by the provisions of this Act,[1] or by any order, rule or regulation of the Commission made under the provisions of this Act to be filed with the Commission, or with the Secretary of the Commission, or with any other officer, and who files or causes the same to be filed with the Secretary of the Commission or other officer, which states or contains any material matter which he knows to be false is guilty of perjury and upon conviction thereof shall be punished by imprisonment in the State penitentiary for not less than two (2) years, nor more than ten (10) years. Laws 1933, ch. 131, p. 291, par. 26.

"Par. 110. Market demand—Transportation and mar-

[1] Sections 84-135 of this title.

keting facilities—Evidence—Proceedings and hearings.—In any proceeding or at any hearing before the Commission wherein the Commission shall require or shall deem it advisable to ascertain and/or find the reasonable market demand and/or the transportation or marketing facilities for oil that may be produced from any common source of supply during any specific period of time thereafter, it shall be competent, subject to such limitations and conditions, as shall be prescribed and provided by general order or rule of the Commission, to receive in evidence in such proceeding or at such hearing, any statement which shall have been communicated to (a) the Commission, or (b) to the Secretary of the Commission, or (c) to the Proration Umpire,[1] by any purchaser or taker of oil by (a) telegram, or (b) letter, which shall state the amount of oil produced from said common source of supply (a) that such purchaser or taker contemplates or intends he or it will purchase during the period of time involved; or (b) the capacity of his or its transportation or marketing facilities which will be, during the period of time involved, available for transportation and/or marketing oil that may be produced from such common source of supply; and the Commission in ascertaining and determining the transportation or marketing facilities, or the reasonable market demands for oil during any such period of time that may be produced from such common source of supply may give such weight to such evidence that it shall determine the same is entitled. Laws 1933, ch. 131, p. 291, par. 27.

"Par. 111. Collateral attack on orders, rules and regulations—Appeals—Supreme Court.—No collateral attack shall be allowed upon orders, rules and regulations of the Commission made hereunder, but the sole method of reviewing such orders and inquiring into and determining their validity, justness, reasonableness or correctness shall be by appeal from such orders, rules or regulations to the Supreme Court. On appeal every such order, rule or regulation shall be regarded as prima facie, valid, reasonable and just. No court of this State except the Supreme Court,

[1] Changed to Conservation Officer. See section 81 of this title.

and it only on appeal, as herein provided, shall have jurisdiction to review, reverse, annul, modify or correct any order, rule, or regulation of the Commission within the general scope of its authority herein or to enjoin, restrain or suspend execution or operation thereof, provided that writs of mandamus and prohibition shall lie from the Supreme Court to the Commission in all cases where such writs, respectively, would under like circumstances lie to any inferior court or officer. Laws 1933, ch. 131, page 292, par. 28.

"Par. 112. Application to amend or modify orders—Hearing—Appeal.—Any person affected by any Legislative or administrative order of the Commission shall have the right at any time to apply to the Commission to repeal, amend, modify, or supplement the same. Such application shall be in writing and shall be heard as expeditiously as possible after notice of the hearing thereon shall have been given in the manner provided by Section 14 of this Act.[1] An appeal shall lie to the Supreme Court from any order made by the Commission in any such proceedings or from the refusal of the Commission to make any order petitioned for therein, in the same manner and within the same time in which other appeals are authorized to be taken by the provisions of this Act,[2] and, on any such appeal, the Supreme Court may affirm the order of the Commission, or the Commission's action in refusing to make the order petitioned for, or may itself make the order which the Commission should have made, or remand the cause to the Commission with directions to make such order as the Supreme Court may determine should have been made. Laws 1933, ch. 131, p. 292, par. 29.

"Par. 113. Appeals—Power of Supreme Court—Supersedeas-Bond.—In the manner now provided by law for taking appeals to the Supreme Court from orders, rules or regulations of the Commission affecting transportation and transmission companies, appeals may be taken to the Supreme Court from any order, rule or regulation made,

1 Section 97 of this title.
2 Section 84-135 of this title.

issued or promulgated by the Commission under the provisions of Section 1 to 13, inclusive,[1] (a) by the Attorney General, or (b) by the Proration Attorney,[2] or (c) by the Proration Umpire,[3] on behalf of the State; or by any person aggrieved by such order, rule, or regulation appealed from. On such appeal the Supreme Court shall have power to determine the validity, the reasonableness and justice of such order, rule, or regulation and should the Court find from the record that the order, rule or regulation appealed from is incorrect, unreasonable, unjust or insufficient in any particular it shall amend, modify, or supplement such order, rule or regulation so as to make the same correct, reasonable, just or sufficient, or shall substitute therefor such order, rule, or regulation as in the Court's opinion is warranted by the record, is reasonable and just, and will effect the purposes and intent of this Act.[4] On such appeals no order, rule or regulation shall be reversed and remanded to the Commission for a new trial thereon or for the taking of additional testimony unless the Court shall find that the evidence introduced before the Commission is insufficient to enable the Court to determine and make a proper order, rule, or regulation or that the party appealing did not have lawful notice of the hearing before the Commission, or that the Commission refused to receive competent evidence offered by the party appealing, which, if true, would leave the order, rule or regulation appealed from without substantial basis in fact. In like manner appeal may be taken to the Supreme Court from any order, judgment or decree issued, or final action taken by the Commission in any proceeding before it wherein it is sought to have any person adjudged (a) guilty of direct contempt, or (b) punished as for contempt for violation of any provision of this Act or of any order, rule or regulation of the Commission made hereunder, or (c) in which is sought any other order of enforcement for the purpose of enforcing the orders, rules, and regulations of the Commission made hereunder, provided any such appeal may

1 Sections 84-96 of this title.
2 Changed to Conservation Attorney. See section 81 of this title.
3 Changed to Conservation Officer. See section 81 of this title.

be taken and prosecuted only by (a) the Attorney General, or (b) the Proration Attorney, or (c) the Proration Umpire, on behalf of the State, or (d) by any person against whom any such order or decree of contempt, or as for contempt, or other order of enforcement shall have been rendered, or (e) by any other person whose interests are affected by such order, judgment, decree or final action taken by the Commission in such proceeding and who is aggrieved thereby.

"No order, rule, regulation, judgment or decree or final action of the Commission appealed from shall be superseded except by order of the Commission or the Supreme Court. No supersedeas shall be granted by either the Commission or the Supreme Court except upon condition that the appellant shall file in said appeal a bond with such surety as shall be approved by the Commission or the Supreme Court, granting such supersedeas. Said bond shall, (a) be in such amount, (b) contain such terms and conditions and (c) be payable to the State for its benefit or for the benefit of such person or persons as shall be damaged by such appeal, if the order, rule, regulation, judgment, decree or action of the Commission appealed from shall be affirmed; all as shall be provided and required by the Commission or the Supreme Court granting such supersedeas.

"All appeals under the provisions of this Act must be taken within 60 days from the date on which the order, rule, regulation, judgment, decree or final action of the Commission appealed from shall have been made, rendered or taken by the Commission; and except as otherwise provided in this Act, the hearing and determination thereof by the Supreme Court, and the enforcement of its judgment and decree therein, and against the sureties upon the supersedeas bond therein, shall be governed by the provisions of law now in force applicable to appeals in proceedings for contempt and other proceedings for the violation of orders, rules and regulations of the Commission affecting transportation companies; and to the extent possible under existing laws the Supreme Court shall give

precedence to all such appeals in the hearing and disposition thereof. Laws 1933, ch. 131, p. 293, par. 30.

"Par. 114. Obstructing or delaying performance of duties—Penalty.—Any person who knowingly and wilfully delays or obstructs any Proration Umpire,[1] any assistant[2] or deputy[3] of the Proration Umpire, or any agent or employee of the Commission, in the performance of any duty enjoined upon such Proration Umpire, assistant or deputy of such Proration Umpire, or agent, or employee of the Commission, by the provisions of this Act[4] or by any lawful order, rule or regulation of the Commission; or who knowingly and wilfully delays or obstructs any public officer of the State, or of any municipal subdivision thereof in the discharge or attempted discharge of any duty of his office, arising by virtue of or growing out of the enforcement of or an attempt to enforce the provisions of this Act, or any lawful order, rule, or regulation of the Commission made in pursuance of the provisions hereof; or who attempts by means of any threat or violence to deter or prevent any such Proration Umpire, assistant, or deputy of the Proration Umpire, or any agent or employee of the Commission from performing any duty imposed upon them when such duty arises by virtue of or grows out of the attempt to enforce the provisions of this Act or of any lawful order, rule, or regulation of the Commission made hereunder, shall be guilty of a misdemeanor and upon conviction thereof may be punished by fine not exceeding Five Hundred Dollars ($500.00), or by confinement in the County jail not exceeding six (6) months, or both. If such threat or violence, or such attempted interference or obstruction is accompanied by the use or attempted use of firearms by any such person so offending, then such person shall be guilty of a felony and upon conviction may be punished by imprisonment in the State penitentiary for a period of not less than one (1) year

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1 Changed to Conservation Officer. See section 81 of this title.
2 Changed to Assistant Conservation Officer. See section 81 of this title.
3 Changed to Deputy Conservation Officers. See section 81 of this title.
4 Sections 84-135 of this title.

nor more than five (5) years. Laws 1933, ch. 131, p. 294, par. 31.

"Par. 115. Conspiracy to violate Act—Punishment.—If two or more persons conspire to violate any provision of this Act,[1] or any lawful order, rule, or regulation of the Commission fixing the method, manner, amount and rate of production of oil or gas from any common source of supply in the State of Oklahoma or conspire to produce oil or gas from any well or wells in any common source of supply in the State of Oklahoma in excess of the allowable production permitted from such well or wells as fixed and determined by any lawful order, rule, or regulation of the Commission or conspire to avoid making or filing any report, map or drawing, or to file any false report, map or drawing with respect to the method, manner, time, place, amount, or rate of production of oil or gas from any well or wells in any common source of supply in the State of Oklahoma, or conspire to avoid the making or filing of any report, map or drawing, or to file any false report, map or drawing, with respect to the removal or transportation of oil or gas by any means whatsoever, from any common source of supply, as may be prescribed or required by this Act or by any lawful order, rule, or regulation of the Commission; or conspire to make any false statement therein with respect to any material matter contained therein, and one or more such parties shall do any act to effect the object of any such conspiracy, then each of the parties to any such conspiracy shall, upon conviction in any court having jurisdiction of the offense, be fined not more than Five Thousand Dollars ($5,000) or imprisoned in the State penitentiary for a period of not exceeding five (5) years, or both. Laws 1933, ch. 131, p. 295, par. 32.

"Par. 116. Violations of orders, rules and regulations—Injunction—Appeal—Supersedeas.—Where the Commission shall make and issue any order, rule, or regulation for the prevention or prohibition of any waste prohibited

[1] Sections 84-135 of this title.

by this Act,[1] or by any order, rule, or regulation of the Commission, authorized by this Act, and the same has been or is being violated by any person, firm, trust, association or corporation, the Attorney General of the State, or the Proration Attorney[2] may in the name of the State bring an action in the District Court of the County wherein the oil or gas properties have been or are being operated in violation of such order, rule, or regulation of the Commission or wherein any such violation of any order, rule or regulation of the Commission has been or is being committed, for a prohibitory and/or a mandatory injunction, enjoining and prohibiting the offender from further violating the provisions of this Act or any such order, rule, or regulation of the Commission and/or commanding and compelling such offender to obey such order, rule, or regulation; and such court is hereby given jurisdiction to grant such injunction or such other relief as may be proper in the premises, and shall have power to grant in any such proceedings temporary restraining orders and/or injunctions, to obtain which no bond shall be required. Neither a temporary nor permanent injunction granted under the provisions of this section shall be stayed or superseded on appeal therefrom except upon order of the Supreme Court, and then only upon application therefor, and hearing thereon after reasonable notice to plaintiff. In so far as permitted and not prohibited by existing statutes, all suits brought under the provisions of this section shall be given, in the hearing and trial thereof, by all courts in which the same are brought and prosecuted, precedence over other actions pending in said courts. Laws 1933, ch. 131, p. 295, par. 33.

"Par. 117. Bribery—Punishment.—Whoever corruptly gives, offers or promises to give to any Member of the Commission, Proration Umpire,[1] assistant[3] or Deputy[3] of a Proration Umpire, Proration Attorney,[3] or agent or Employee of the Commission, any gift or gratuity whatso-

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[1] Sections 84-135 of this title.

[2] Changed to Conservation Attorney. See section 81 of this title.

[3] Change of names. See section 81 of this title.

ever with an intent to influence any such officer or person in his acts or conduct with respect to (a) enforcing any order, rule or regulation of the Commission made under this Act,[1] or (b) the discharge of any duty by any such officer or person imposed upon him by the provisions of this Act, or by any order, rule, or regulation of the Commission issued and promulgated under the provisions of this Act, shall be punished by imprisonment in the State penitentiary not exceeding five (5) years, and by fine not exceeding Five Thousand Dollars ($5,000). Laws 1933, ch. 131, p. 296, par. 34.

"Par. 118. Bribery—Accepting bribe—Punishment—Any Member of the Commission, Proration Umpire,[1] assistant,[2] deputy,[2] agent or employee of the Proration Umpire, Proration Attorney,[2] or any agent or employee of the Commission who asks, receives or agrees to receive any gift or gratuity upon any agreement or understanding that his acts or conduct with respect to (a) enforcing any provision of this Act[3] or of any order, rule, or regulation of the Commission made under or in pursuant of this Act, or (b) the discharge of any duty by any such officer or person imposed upon him by the provisions of this Act, or by any order, rule, or regulation of the Commission issued and promulgated under the provisions of this Act, shall be influenced thereby shall be punishable by imprisonment in the penitentiary not exceeding ten (10) years, and by fine not exceeding Ten Thousand Dollars ($10,000). Laws 1933, ch. 131, p. 296, par. 35.

"Par. 119. Bribery—State's evidence—Immunity.—In all cases involving the offering, promising, giving or receiving any gift, or gratuity, made criminal by Sections 34 and 35 of this Act,[4] and in all cases for conspiracy under Section 32 of this Act,[4] the party to such crime or crimes who shall first furnish information in relation thereto as against the other party or parties thereto, and in any prosecution therefor shall testify to the same truthfully and fully,

[1] Sections 84-135 of this title.
[2] Change of names. See section 81 of this title.
[3] Sections 117 and 118 of this title.
[4] Section 115 of this title."

shall not thereafter be criminally liable therefor, but in such cases no conviction shall be had on the uncorroborated testimony of one such witness. Laws 1933, ch. 131, p. 297, par. 36.

"Par. 120. Powers—Grant of not to restrict general powers.—Any grant of specific power or powers, and any imposition of any specific duty or duties upon the Commission by the provisions of this Act[1] shall not be construed to restrict or limit the general powers granted and the general duties imposed upon the Comimssion with respect to the enforcement of the provisions of this Act. Laws 1933, ch. 131, p. 297, par. 37.

"Par. 121. Conservation Officer—Bond—Salary—Tenure—Duties.—There is hereby created the office of Conservation Officer, which shall be filled as hereinafter provided. Said Conservation Officer shall, before he enters upon the duties of his office, take and subscribe to the Constitutional Oath of office prescribed for State officials, and shall give a bond to the State of Oklahoma in the sum of ten thousand dollars ($10,000.00) with surety to be approved by the Commission conditioned that he will honestly and faithfully perform his duties, and that he will pay to the State, in the manner prescribed by law, all money which comes into his hand by virtue of such office. The tenure of his office shall be at the pleasure of the Commission. The Conservation Officer shall receive a salary to be fixed by the Commission not to exceed the sum of four thousand eight hundred dollars ($4,800.00) per annum, payable monthly, and shall possess such powers and authority, and be charged with such duties as provided in this Act, and in addition thereto he shall investigate all charges and complaints of violations of this Act, and any orders, rules and regulations of the Commission, and report all such violations to the Commission and to the Conservation Attorney, and he shall file charges and complaints with the Commission, or other proper tribunal or court, of all such violations. He shall obey and enforce

[1] Sections 84-135 of this title.

all orders of the Commission. Laws 1933, ch. 131, p. 297, par. 38; Laws 1941, p. 215, par 1.

"Par. 122. Repealed. Laws 1941, p. 217, par. 5.

"Par. 123. Conservation Officer—Assistant Conservation Officer—Qualifications.—Be it provided, however, that the Proration Umpire [1] and Assistant Proration Umpire,[2] created under this act [3] shall have had at least seven (7) years practical experience in the production of oil. Laws 1933, ch. 131, p. 298, par. 39a.

"Par. 124. Conservation Attorney—Tenure—Salary—Duties.—There is hereby created the office of Conservation Attorney, which office shall be filled as hereinafter provided. The Conservation Attorney shall receive a salary to be fixed by the Commission not exceeding the sum of four thousand eight hundred dollars ($4,800.00) per annum, payable monthly. Said attorney shall, before he enters upon the duties of his office, take and subscribe to the Constitutional Oath of office prescribed for State officials. The tenure of his office shall be at the pleasure of the Commission. The Conservation Attorney shall be the legal advisor to the Commission, Conservation Officer and deputies in all matters arising under this Act. He shall appear for the State, the Conservation Officer and deputies, in all proceedings under this Act before the Commission, shall file and prosecute charges and complaints of violations of this Act, and of any orders, rules and regulations of the Commission made hereunder, shall file and prosecute contempt proceedings, and proceedings as for contempt arising hereunder, and shall appear for the State, the Conservation Officer and deputies, and prosecute or defend in their behalf all actions and proceedings in the Courts of the United States and in all courts of this State arising out of the enforcement of this Act, or any orders, rules, or regulations of the Commission made hereunder; provided, however, that as to any proceeding authorized by this Act which shall be commenced and prosecuted by any

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1 Changed to Conservation Officer. See section 81 of this title.
2 Changed to Assistant Conservation Officer. See section 81 of this title.
3 Sections 84-135 of this title.

producer or taker of oil, or other person, the Conservation Attorney shall be permitted to assist in such proceeding, but shall conduct the same only upon the request of the person instituting the same; and provided further, that as to any criminal action, in the district or county courts of this State, arising out of the enforcement of this Act or any orders, rules, or regulations of the Commission, the Conservation Attorney shall not supersede but shall assist the County Attorney in the prosecution thereof; and provided further, that any producer or taker of oil, or other interested person, shall be permitted to assist, through counsel, in any action or proceeding arising out of the enforcement of this Act, or any orders, rules or regulations made by the Commission hereunder.

"In addition to his other duties, the Conservation Attorney shall be the legal adviser to the State Fuel Inspector, and shall appear for the State and said State Fuel Inspector in all proceedings before the Commission, and when requested, by the State Fuel Inspector, or the Commission, so to do, shall appear in any court in this State, and shall prosecute and defend all actions and proceedings in connection with the enforcement of the laws of the State of Oklahoma and the rules of the Commission relating to the inspection of petroleum products as set forth in Article 6, of Chapter 59, Oklahoma Statutes 1931, and the Acts amendatory thereof.[1] Laws 1933, ch. 131, p. 298, par. 40; Laws 1941, p. 216, par. 2.

"Par. 125. Appointments—Made by Commission.—The Proration Empire,[2] Assistant Proration Umpire,[2] and Proration Attorney,[3] shall be appointed by the Commission. Laws 1933, ch. 131, page 299, par. 40-A.

"Par. 126. Deputies—Appointment—Powers—Salaries. —The Commission may, at any time when it finds that the public interests will be subserved thereby, appoint not more than twenty-one (21) deputies, to be known as deputy conservation officers, who shall have and exercise all the powers granted to them in this Act, and who shall be

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[1] Section 321 et seq. of this title.

[2] Changed to Conservation Officer. See section 81 of this title.

[3] Changed to Assistant Conservation Officer. See section 81 of title.

charged with the performance of all the duties assigned to them by the Conservation Officer, and shall, when so ordered by the Commission, enforce any order, rule, or regulation, or serve any writ or process issued by the Commission; and the number shall be increased or decreased as the Commission shall order; provided, however, that not more than twenty-one (21) deputies shall at any time be appointed and act as such; and one of said deputies shall be a petroleum engineer, who in addition to his educational qualifications shall have had at least five years' experience in production of oil, and whose salary shall not exceed three thousand dollars ($3,000.00) per annum, payable monthly. When so appointed the salaries of not to exceed ten of said deputies shall be fixed by the Commission at not to exceed two thousand four hundred dollars ($2,400.00) per annum, payable monthly, and the salaries of the other ten deputies shall be fixed by the Commission at not to exceed one thousand eight hundred dollars ($1,800.00) per annum, payable monthly; provided that, not less than three fourths of the deputy conservation officers shall have had at lease five years' practical experience in the production of oil; and provided further, that the traveling expenses of said deputy conservation officers shall not exceed seventy-five dollars ($75.00) each in any month. Laws 1933, ch. 131, p. 299, par. 41; Laws 1941, p. 216, par. 3.

"Par. 127. Stenographic and clerical help—The Commission may employ such stenographic and clerical help as may be required, not exceeding nine (9) stenographers and clerks, one of whom may be designated "Chief Clerk" and one of whom may be a reporter. The salaries of said employees shall be fixed by the Commission, but the salary of the Chief Clerk shall not exceed two thousand seven hundred dollars ($2,700.00) per annum, payable monthly, and the salary of the reporter shall not exceed two thousand one hundred dollars ($2,100.00) per annum, payable monthly, and the salary of each other stenographer and clerk shall not exceed one thousand five hundred dollars ($1,-

500.00) per annum, payable monthly. Laws 1933, ch. 131, p. 299, par. 42; Laws 1941, p. 217, par. 4.

"Par. 128. Conservation Officer and assistants—Powers —Expenses.—The Proration Umpire,[1] his assistant[1] and deputies,[1] shall each possess all of the powers and authorities of a peace officer, with the right to bear firearms, and they and the Proration Attorney[2] shall be allowed and paid out of the Proration fund[3] their actual and necessary expenses while absent from their official headquarters on official duties, and all necessary office supplies and expense, including stationery, telephone and telegraph, postage and printing. Laws 1933, ch. 131, p. 299, par. 43.

"Par. 129 Repealed. Laws 1941, p. 217, par. 5.

"Par. 130. Vacancies—How filled.—Except as otherwise provided in this Act,[4] all vacancies in any office or in any employment, provided or authorized under the provisions of this Act, may be filled by the same officer or officers and in the same manner and for the same term as is provided for the original appointment of such officers or employment. Laws 1933, ch. 131, p. 300, par. 44a.

"Par. 131. Inspector for commission—Power and duties.—The Commission shall have the right from time to time to designate one or more of its agents or employees to act as inspector for the Commission, who shall serve as such inspector during its pleasure, without additional compensation for such services, and who shall have the right, at all times, to go upon and inspect oil and gas properties from which oil or gas is being produced, oil and gas pipe line facilities, oil and gas pump station properties and refineries, for the purpose of ascertaining whether the provisions of this Act,[5] and the orders, rules, regulations and judgments of the Commission, made in pursuance of the provisions of this Act, are being complied with, and shall report to the Commission any violations thereof. Such inspectors, when so appointed and acting, shall each possess

[1] Change of names. See section 81 of this title.
[2] Changed to Conservation Attorney. See section 81 of this title.
[3] Changed to Conservation Fund. See section 81 of this title.
[4] Section 84-135 of this title.
[5] Sections 84-135 of this title.

all of the powers and authority of a peace officer and shall have the right to bear firearms. Laws 1933, ch. 131, p. 300, par. 45.

"Par. 132. State Board of Public Affairs—Rooms and supplies.—The State Board of Affairs shall provide such rooms, furniture and supplies as shall be necessary for the use of the Proration Umpire,[1] his assistant,[1] and deputies,[1] and the Proration Attorney,[1] in carrying out their duties as prescribed by this Act.[2] Provided, that no expense incurred in carrying out the provisions of this section or any part of this Act, shall be paid out of the General Revenue Fund of the State of Oklahoma. Laws 1933, ch. 131, p. 300, par. 46.

"Par. 133. Conservation fund—Items paid therefrom.—There is hereby created in the State Treasury a fund to be known as the "Proration Fund"[3] which shall consist of all moneys that may be payable to said fund by law, and there shall be paid therefrom all salaries and expenses of the Proration Umpire,[2] his assistant,[4] deputies[4] and employees, and the Proration Attorney,[4] and the salaries of reporters, stenographers and clerks authorized by this Act[3] to be employed, and such other items as are or shall be authorized by law to be paid therefrom in connection with the enforcement of the provisions of this Act. Laws 1933, ch. 131, p. 300, par. 47.

"Par. 134. Partial invalidity—Effect.—If any section, paragraph, sentence or phrase of this Act[5] shall be declared unconstitutional, or void for any other reason by any Court of final jurisdiction, such fact shall not in any manner invalidate or affect any other section, paragraph, sentence or phrase of this Act, but the same shall continue in full force and effect. Laws 1933, ch. 131, p. 301, par. 48.

"Par. 135. Pending actions not terminated.—The enactment of this Act[5] shall not terminate any proceeding or proceedings now pending before the Commission, includ-

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[1] Change of names. See section 81 of this title.

[2] Sections 84-135 of this title.

[3] Changed to Conservation Fund. See section 81 of this title.

[4] Change of names. See section 81 of this title.

[5] Sections 84-135 of this title.

from the Conservation Fund. As amended Laws 1943, p. 127, Par. 3; Laws 1945, p. 161, Par. 2; Laws 1947, p. 333, Par. 8.

"Par. 127.1. *Traveling and subsistence expenses.*—Each of the fourteen (14) deputy conservation officers provided for in this Act[1] shall be entitled to receive five (5) cents per mile traveling expense when traveling in his privately owned automobile on official business of the Conservation Department, or any necessary traveling expense when not using his automobile. He shall be entitled to subsistence expense at not to exceed Five Dollars ($5.00) per day within the State of Oklahoma. Each deputy conservation officer shall keep an accurate record by meter of the miles traveled by automobile, and an accurate and complete statement of all traveling, subsistence, and other expense, which shall be itemized, sworn to by claimant, and with proper receipts attached thereto, and when approved by the Conservation Officer and Corporation Commission the same shall be payable from the Conservation Fund. The limitation on subsistence for the Conservation Officer, the Conservation Attorney, the four oil or gas engineers or petroleum geologists and the Chief Clerk shall be not to exceed Seven Dollars and Fifty Cents ($7.50) per day while traveling in the State of Oklahoma. When traveling outside the State such officers and employees shall receive and be reimbursed for their actual and necessary expenses to be evideneed by receipts for the money actually expended. All necessary traveling, subsistence, and other neeessary expenses of any employee of the Conservation Department shall be paid from the Conservation Fund, and the General Fund of this State shall not be liable for the salary or expense of any employee of the Conservation Department. Laws 1943, P. 127; Par. 4, as amended Laws 1945, p. 162, Par. 3.

"Par. 127.2. *Trial examiner.*—There is hereby created the Office of Trial Examiner, which office shall be filled by the Corporation Commission. The Trial Examiner shall receive a salary to be fixed by the Commission, not exceed-

[1] Sections 125-127.1 of this title.

ing the sum of Five Thousand Dollars ($5,000.00) per annum, payable monthly. The tenure of his office shall be at the pleasure of the Commission and he shall hear all causes referred to him by the Commission for hearing, and then shall file with the Commission his report of the proceedings had and his recommendation as to the disposition of the proceedings. The Corporation Commission is hereby authorized to refer any and all cases as it sees fit to said Trial Examiner, or any other person employed by the Commission, for hearing. The salary of the Trial Examiner shall be paid from the Conservation Fund. Laws 1947, p. 334, Par. 9.

APPENDIX "J"

SENATE BILL NO. 203 OF THE OKLAHOMA LEGISLATURE OF 1951

SECRETARY OF STATE, ITEM NO. 215

An Act

Enrolled Senate Bill No. 203

By: GARVIN and MAHAN Of the Senate and BULLARD and MILLER Of the House

AN ACT AUTHORIZING AND RELATING TO THE UNITIZED MANAGEMENT, OPERATION AND DEVELOPMENT, IN WHOLE OR IN PART, OF COMMON SOURCES OF SUPPLY OF OIL, OIL AND GAS, OR GAS DISTILLATE IN THIS STATE; DEFINING COMMON SOURCE TO WHICH ACT IS APPLICABLE; CONFERRING AUTHORITY UPON AND DEFINING THE DUTIES OF THE CORPORATION COMMISSION IN REGARD THERETO; AUTHORIZING THE ORGANIZATION OF UNITS AND PRESCRIBING THE PROCEDURE THEREFOR, INCLUDING THE RIGHT AND METHOD OF APPEAL FROM ORDERS OF THE CORPORATION COMMISSION, TO THE SUPREME COURT FOR EQUITABLE RELIEF; DEFINING THE PURPOSES, NATURE, FUNCTIONS AND POWERS OF SUCH UNITS; AUTHORIZING THE INCLUSION OF PUBLIC LANDS WITHIN THE UNIT AREA OF A UNIT; LIMITING THE EFFECT OF ANTI-TRUST LAWS; MAKING OPERATIONS WITHIN A UNIT AREA BY PERSONS OTHER THAN UNIT UNLAWFUL; REPEALING TIT. 52, CHAP. 3b, SECTIONS 1-17, INCLUSIVE, SESSION LAWS 1945; AND DECLARING AN EMERGENCY.

Be it Enacted by the People of the State of Oklahoma:

Section 1. The Legislature finds and determines that it is desirable and necessary, under the circumstances and for the purposes hereinafter set out, to authorize and provide for unitized management, operation and further development of the oil and gas properties to which this Act is applicable, to the end that a greater ultimate re-

covery of oil and gas may be had therefrom, waste prevented, and the correlative rights of the owners in a fuller and more beneficial enjoyment of the oil and gas rights, protected.

Section 2. Subject to the limitations of this Act the Corporation Commission of the State of Oklahoma, hereinafter referred to as the "Commission", is hereby vested with jurisdiction, power and authority, and it shall be its duty to make and enforce such orders and do such things as may be necessary or proper to carry out and effectuate the purposes of this Act.

Section 3. If upon the filing of a petition therefor and after notice and hearing, all in the form and manner and in accordance with the procedure and requirements hereinafter provided, the Commission shall find (a) that the unitized management, operation and further development of a common source of supply of oil and gas or portion thereof is reasonably necessary in order to effectively carry on pressure-maintenance or repressuring operations, cycling operations, water flooding operations, or any combination thereof, or any other form of joint effort calculated to substantially increase the ultimate recovery of oil and gas from the common source of supply; and (b) that one or more of said unitized methods of operation as applied to such common source of supply or portion thereof are feasible, will prevent waste and will with reasonable probability result in the increased recovery of substantially more oil and gas from the common source of supply than would otherwise be recovered; and (c) that the estimated additional cost, if any, of conducting such operations will not exceed the value of the additional oil and gas so recovered; and (d) that such unitization and adoption of one or more of such unitized methods of operation is for the common good and will result in the general advantage of the owners of the oil and gas rights within the common source of supply or portion thereof directly affected, it shall make a finding to that effect and make an order creating the unit and providing for the unitization and unitized operation of the common source of sup-

ply or portion thereof described in the order all upon such terms and conditions, as may be shown by the evidence to be fair, reasonable, equitable and which are necessary or proper to protect, safeguard, and adjust the respective rights and obligations of the several persons affected, including royalty owners, owners of overriding royalties, oil and gas payments, carried interests, mortgagees, lien claimants and others, as well as the lessees. The petition shall set forth a description of the proposed unit area with a map or plat thereof attached, must allege the existence of the facts required to be found by the Commission as hereinabove provided and shall have attached thereto a recommended plan of unitization applicable to such proposed unit area and which the petitioner or petitioners consider to be fair, reasonable and equitable.

Section 4. The order of the Commission shall define the area of the common source of supply or portion thereof to be included within the unit area and prescribe with reasonable detail the plan of unitization applicable thereto.

Each unit and unit area shall be limited to all or a portion of a single common source of supply. Only so much of a common source of supply as has been defined and determined to be productive of oil and gas by actual drilling operations may be so included within the unit area.

A unit may be created to embrace less than the whole of a common source of supply only where it is shown by the evidence that the area to be so included within the unit area is of such size and shape as may be reasonably required for the successful and efficient conduct of the unitized method or methods of operation for which the unit is created, and that the conduct thereof will have no material adverse effect upon the remainder of such common source of supply.

The plan of unitization for each such unit and unit area shall be one suited to the needs and requirements of the particular unit dependent upon the facts and conditions found to exist with respect thereto. In addition to such other terms, provisions, conditions and requirements found by the Commission to be reasonably necessary or proper

to effectuate or accomplish the purpose of this Act, and subject to the further requirements hereof, each such plan of unitization shall contain fair, reasonable and equitable provisions for:

(a) The efficient unitized management or control of the further development and operation of the unit area for the recovery of oil and gas from the common source of supply affected. Under such a plan the actual operations within the unit area may be carried on in whole or in part by the unit itself, or by one or more of the lessees within the unit area as unit operator subject to the supervision and direction of the unit, dependent upon what is most beneficial or expedient. The designation of the unit operator shall be by vote of the lessees in the unit in a manner provided in the plan of unitization and not by the Commission.

(b) The division of interest or formula for the apportionment and allocation of the unit production, among and to the several separately-owned tracts within the unit area such as will reasonably permit persons otherwise entitled to share in or benefit by the production from such separately-owned tracts to produce or receive, in lieu thereof, their fair, equitable and reasonable share of the unit production or other benefits thereof. A separately-owned tract's fair, equitable and reasonable share of the unit production shall be measured by the value of each such tract for oil and gas purposes and its contributing value to the unit in relation to like values of other tracts in the unit, taking into account acreage, the quantity of oil and gas recoverable therefrom, location on structure, its probable productivity of oil and gas in the absence of unit operations, the burden of operation to which the tract will or is likely to be subjected, or so many of said factors, or such other pertinent engineering, geological, or operating factors, as may be reasonably susceptible of determination. Unit production as that term is used in this Act shall mean and include all oil and gas produced from a unit area from and after the effective date of the order of the Commission creating the unit regardless of the well

or tract within the unit area from which the same is produced.

(e) The manner in which the unit and the further development and operation of the unit area shall or may be financed and the basis, terms and conditions on which the cost and expense thereof shall be apportioned among and assessed against the tracts and interests made chargeable therewith, including a detailed accounting procedure governing all charges and credits incident to such operations. Upon and subject to such terms and conditions as to time and rate of interest as may be fair to all concerned, reasonable provision shall be made in the plan of unitization for carrying or otherwise financing lessees who are unable to promptly meet their financial obligations in connection with the unit.

(d) The procedure and basis upon which wells, equipment and other properties of the several lessees within the unit area are to be taken over and used for unit operations, including the method of arriving at the compensation thereof, or of otherwise proportionately equalizing or adjusting the investment of the several lessees in the project as of the effective date of unit operation.

(e) The creation of an operating committee to have general over-all management and control of the unit and the conduct of its business and affairs and the operations carried on by it, together with the creation or designation of such other subcommittees, boards or officers to function under authority of the operating committee as may be necessary, proper or convenient in the efficient management of the unit, defining the powers and duties of all such committees, boards or officers and prescribing their tenure and time and method of their selection.

(f) The time when the plan of unitization shall become and be effective.

(g) The time when and conditions under which and the method by which the unit shall or may be dissolved and its affairs wound up.

Section 5. No order of the Commission creating a unit and prescribing the plan of unitization applicable thereto

shall become effective unless and until the plan of unitization has been signed, or in writing ratified or approved by lessees of record of not less than sixty three per cent (63%) of the unit area affected thereby and by owners of record of not less than sixty three per cent (63%) (exclusive of royalty interests owned by lessees or by subsidiaries of any lessee) of the normal one-eighth (⅛) royalty interest in and to the unit area, and the Commission has made a finding either in the order creating the unit or in a supplemental order that the plan of unitization has been so signed, ratified or approved by lessees and royalty owners owning the required percentage interest in and to the unit area. Where the plan of unitization has not been so signed, ratified or approved by lessees and royalty owners owning the required percentage interest in and to the unit area at the time the order creating the unit is made, the Commission shall, upon petition and notice, hold such additional and supplemental hearings as may be requested or required to determine if and when the plan of unitization has been so signed, ratified or approved by lessees and royalty owners owning the required percentage interest in and to the unit area and shall, in respect to such hearings, make and enter a finding of its determination in such regard. In the event lessees and royalty owners, or either, owning the required percentage interest in and to the unit area have not so signed, ratified or approved the plan of unitization within a period of six (6) months from and after the date on which the order creating the unit is made, the order creating the unit shall cease to be of further force and effect and shall be revoked by the Commission.

Section 6. Except as otherwise herein expressly provided, all proceedings had under this Act including the filing of petitions, the giving of notices, the conduct of hearings and other action taken by the Commission shall be in the form and manner and in accordance with the procedure and procedural requirements provided in Sections 84 to 135, inclusive, Title 52, Oklahoma Statutes, 1941, or any amendment thereof with reference to proceedings

thereunder. Such additional notice shall be given as may be required by the Commission. The Conservation Officer, his assistant and deputies and the Conservation Attorney shall act without additional compensation as technical advisors to the Commission to the extent that the Commission may require. Any person aggrieved by any order of the Commission made pursuant to this Act may appeal therefrom to the Supreme Court of the State of Oklahoma upon the same conditions, within the same time and in the same manner as is provided in said Sections 84 to 135, inclusive, Title 52, Oklahoma Statutes, 1941, or any amendments thereof, for the taking of appeals from the orders of the Commission made thereunder.

Section 7. From and after the effective date of an order of the Commission creating a unit and prescribing the plan of unitization applicable thereto, the operation of any well producing from the common source of supply or portion thereof within the unit area defined in the order by persons other than the unit or persons acting under its authority or except in the manner and to the extent provided in such plan of unitization shall be unlawful and is hereby prohibited.

Section 8. Each unit created under the provisions of this Act shall be a body politic and corporate, capable of suing, being sued and contracting as such in its own name. Each such unit shall be authorized on behalf and for the account of all the owners of the oil and gas rights within the unit area, without profit to the unit, to supervise, manage and conduct the further development and operations for the production of oil and gas from the unit area, pursuant to the powers conferred, and subject to the limitations imposed by the provisions of this Act and by the plan of unitization.

The obligation or liability of the lessee or other owners of the oil and gas rights in the several separately-owned tracts for the payment of unit expense shall at all times be several and not joint or collective and in no event shall a lessee or other owner of the oil and gas rights in the separately-owned tract be chargeable with, obligated or

liable, directly or indirectly, for more than the amount apportioned, assessed or otherwise charged to his interest in such separately-owned tract pursuant to the plan of unitization and then only to the extent of the lien provided for in this Act.

Subject to such reasonable limitations as may be set out in the plan of unitization, the unit shall have a first and prior lien upon the leasehold estate and other oil and gas rights (exclusive of a one-eighth (⅛) royalty interest) in and to each separately-owned tract, the interest of the owners thereof in and to the unit production and all equipment in the possession of the unit, to secure the payment of the amount of the unit expense charged to and assessed against such separately-owned tract. The interest of the lessee or other persons who by lease, contract or otherwise are obligated or responsible for the cost and expense of developing and operating a separately-owned tract for oil and gas in the absence of unitization, shall however, be primarily responsible for and charged with any assessment for unit expense made against such tract and resort may be had to overriding royalties, oil and gas payments, royalty interests in excess of one-eighth (⅛) of the production, or other interests which otherwise are not chargeable with such cost, only in the event the owner of the interest primarily responsible fails to pay such assessment or the production to the credit thereof is insufficient for that purpose. In the event the owner of any royalty interest, overriding royalty, oil and gas payment or other interest which under the plan of unitization is not primarily responsible therefor pays in whole or in part the amount of an assessment for unit expense for the purpose of protecting such interest, or the amount of the assessment in whole or in part is deducted from the unit production to the credit of such interest, the owner thereof shall to the extent of such payment or deduction be subrogated to all of the rights of the unit with respect to the interest or interests primarily responsible for such assessment. A one-eighth (⅛) part of the unit production allocated to each separately-owned tract shall in all events be regarded

as royalty to be distributed to and among, or the proceeds thereof paid to, the royalty owners free and clear of all unit expense and free of any lien therefor.

Section 9. Property rights, leases, contracts, and all other rights and obligations shall be regarded as amended and modified to the extent necessary to conform to the provisions and requirements of this Act and to any valid and applicable plan of unitization or order of the Commission made and adopted pursuant hereto, but otherwise to remain in full force and effect.

Nothing contained in this Act shall be construed to require a transfer to or vesting in the unit of title to the separately-owned tracts or leases thereon within the unit area, other than the right to use and operate the same to the extent set out in the plan of unitization; nor shall the unit be regarded as owning the unit production. The unit production and the proceeds from the sale thereof shall be owned by the several persons to whom the same is allocated under the plan of unitization. All property, whether real or personal, which the unit may in any way acquire, hold or possess shall not be acquired, held or possessed by the unit for its own account but shall be so acquired, held and possessed by the unit for the account and as agent of the several lessees and shall be the property of such lessees as their interests may appear under the plan of unitization, subject, however, to the right of the unit to the possession, management, use or disposal of the same in the proper conduct of its affairs, and subject to any lien the unit may have thereon to secure the payment of unit expense.

The amount of the unit production allocated to each separately-owned tract within the unit, and only that amount, regardless of the well or wells in the unit area from which it may be produced, and regardless of whether it be more or less than the amount of the production from the well or wells, if any, on any such separately-owned tract, shall for all intents, uses and purposes be regarded and considered as production from such separately-owned tract, and, except as may be otherwise authorized in this

Act, or in the plan of unitization approved by the Commission, shall be distributed among or the proceeds thereof paid to the several persons entitled to share in the production from such separately-owned tract in the same manner, in the same proportions, and upon the same conditions that they would have participated and shared in the production or proceeds thereof from such separately owned tract had not said unit been organized, and with the same legal force and effect. If adequate provisions are made for the receipt thereof, the share of the unit production allocated to each separately-owned tract shall be delivered in kind to the persons entitled thereto by virtue of ownership of oil and gas rights therein or by purchase from such owners, subject to the rights of the unit to withhold and sell the same in payment of unit expense pursuant to the plan of unitization, and subject further to the call of the unit on such portions of the gas for operating purposes as may be provided in the plan of unitization.

Operations carried on under and in accordance with the plan of unitization shall be regarded and considered as a fulfilment of and compliance with all of the provisions, covenants, and conditions, express or implied, of the several oil and gas mining leases upon lands included within the unit area, or other contracts pertaining to the development thereof, insofar as said leases or other contracts may relate to the common source of supply or portion thereof included in the unit area. Wells drilled or operated on any part of the unit area no matter where located shall for all purposes be regarded as wells drilled on each separately-owned tract within such unit area.

Nothing herein or in any plan of unitization shall be construed as increasing or decreasing the implied covenants of a lease in respect to a common source of supply or lands not included within the unit area of a unit.

Section 10. The unit area of a unit may be enlarged to include adjoining portions of the same common source of supply, including the unit area of another unit, and a new unit created for the unitized management, operation and further development of such enlarged unit area, or the

plan of unitization may be otherwise amended, all in the same manner, upon the same conditions and subject to the same limitations as herein provided with respect to the creation of a unit in the first instance, except, that where an amendment to plan of unitization relates only to the rights and obligations as between lessees the requirement that the same be signed ratified or approved by royalty owners of record of not less than sixty three per cent (63%) of the unit area shall have no application.

Section 11. The Commissioners of the Land Office, or other proper board or officer of the State having the control and management of State land, and the proper board or officer of any political, municipal, or other subdivision or agency of the State, are hereby authorized and shall have the power on behalf of the State or of such political, municipal, or other subdivision or agency thereof, with respect to land or oil and gas rights subject to the control and management of such respective body, board, or officer, to consent to or participate in any plan or program of unitization adopted pursuant to this Act.

Section 12. Neither the unit production or proceeds from the sale thereof, nor other receipts shall be treated, regarded, or taxed as income or profits of the unit; but instead, all such receipts shall be the income of the several persons to whom or to whose credit the same are payable under the plan of unitization. To the extent the unit may receive or disburse said receipts it shall only do so as a common administrative agent of the persons to whom the same are payable.

Section 13. For the purposes of this Act, unless the context otherwise requires:

(a) The term "lessee" refers not only to lessees under oil and gas leases but also to the owners of unleased lands or mineral rights having the right to develop the same for oil and gas.

(b) Any reference to a separately-owned tract, although in general terms broad enough to include the surface and all underlying common sources of supply of oil and gas shall have reference thereto only in relation to the common

source of supply or portion thereof embraced within the unit area of a particular unit.

(c) The phrase "oil and gas" shall refer not only to oil and gas as such in combination one with the other, but shall have general reference to oil, gas, casinghead gas, casinghead gasoline, gas-distillate, or other hydrocarbons, or any combination or combinations thereof, which may be found in or produced from a common source of supply of oil, oil and gas or gas-distillate.

(d) The term "person" shall mean and include any individual, corporation, partnership, common law or statutory trust, association of any kind, the State of Oklahoma or any subdivision or agency thereof acting in a proprietary capacity, guardian, executor, administrator, fiduciary of any kind, or any other entity or being capable of owning an interest in and to a common source of supply of oil and gas.

(e) The term "unit expense" shall include and mean any and all cost, expense, or indebtedness incurred by the unit in the establishment of its organization, or incurred in the conduct and management of its affairs or the operations carried on by it.

Section 14. The provisions of this Act are declared to be severable, and, if any section, sentence, clause or part thereof be held invalid or unconstitutional for any reason, such invalidity or unconstitutionality shall not be construed to affect the validity of the remaining provisions of this Act.

Section 15. No agreement between or among lessees or other owners of oil and gas rights in oil and gas properties, entered into pursuant hereto or with a view or for the purpose of bringing about the unitized development or operation of such properties, shall be held to violate any of the statutes of this State prohibiting monopolies or acts, arrangements, agreements, contracts, combinations or conspiracies in restraint of trade or commerce.

Section 16. Title 52, Chap. 3b §§ 1-17 inclusive, Session Laws of Oklahoma, 1945, are hereby repealed.

Section 17. It being immediately necessary for the preser-

vation of the public peace, health and safety, an emergency is hereby declared to exist, by reason whereof this Act shall take effect and be in full force from and after its passage and approval.

Passed the Senate the 11th day of April, 1951.

BOYD COWDEN,
President Pro tem of the Senate.

Passed the House of Representatives the 14th day of May, 1951.

JAMES M. BULLARD,
Speaker of the House of Representatives.

Office of the Governor. This Bill was received by the Governor this 15th day of May, 1951, at 7:25 o'clock P. M.

By CLARABELLE SMITH,
Secretary.
(Title)

Approved by the Governor of the State of Oklahoma the 26th day of May, 1951, at 12:13 P. M.

JOHNSTON MURRAY,
Governor of the State of Oklahoma.

Office of the Secretary of State. Senate Bill No. 203. This Bill was received by the Secretary of State this 28th day of May, 1951, at 1:30 o'clock P. M.

JOHN D. CONNER,
Secretary of State.
By (Title)

Correctly Enrolled: ARTHUR L. PRICE, *Chairman*, Committee on Engrossed and Enrolled Bills.

Office-Supreme Court, U. S.
FILED
SEP 4 1951
CHARLES ELMORE CROPLEY
CLERK

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1951

No. 302

KIT C. FARWELL, FRANK PHOHLEMANN, L. A. DAVIS, ET AL.,

Appellants,

vs.

AMERADA PETROLEUM CORPORATION, ANDERSON-PRICHARD OIL CORPORATION, GULF OIL CORPORATION, ET AL.

APPEAL FROM THE SUPREME COURT OF THE STATE OF OKLAHOMA

STATEMENT AS TO JURISDICTION

JIM HATCHER,
RECORD BOND, JR.,
Counsel for Appellants.

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Pollock v. *Williams*, 322 U. S. 4, 88 L. ed. 1095 19
Postal Telegraph Cable Co. v. *Newport*, 247 U. S. 464, 62 L. ed. 1215 19
Sterling v. *Constantin*, 287 U. S. 278, 77 ed. 375 19
Thompson v. *Consolidated Gas Utilities*, 300 U. S. 55, 81 L. ed. 510
United Gas Public Service Co. v. *Texas*, 303 U. S. 123, 82 L. ed. 702 1
Williams v. *North Carolina*, 325 U. S. 226, 89 L. ed. 1577 1

STATUTES CITED

Constitution of the United States:
Article I, Section 10
First Amendment
Fourteenth Amendment

Oklahoma Statutes Annotated, Volume 52, Secs. 286.01 to 286.17

Order No. 20289 of the Corporation Commission of Oklahoma

United States Code, Title 28:
Section 1257 2,
Section 2101(c) 3,

IN THE SUPREME COURT OF THE STATE OF OKLAHOMA

No. 33,336

THE PALMER OIL CORPORATION, A CORPORATION, ET AL.,

Appellants,

vs.

THE PHILLIPS PETROLEUM COMPANY, A CORPORATION, ET AL.,

Appellees

IN THE MATTER OF THE PETITION FOR THE CREATION OF THE WEST CEMENT MEDRANO UNIT HAVING FOR ITS PURPOSE THE UNITIZED MANAGEMENT, OPERATION AND FURTHER DEVELOPMENT OF THE WEST CEMENT MEDRANO COMMON SOURCE OF SUPPLY OF OIL AND GAS IN CADDO COUNTY, OKLAHOMA, THE DEFINING OF THE UNIT AREA THEREOF AND THE PRESCRIBING OF THE PLAN OF UNITIZATION APPLICABLE TO SUCH UNIT AND UNIT AREA.

JURISDICTIONAL STATEMENT

(a)

Basis upon Which It Is Contended That the United States Supreme Court Has Jurisdiction

A final judgment and decision has been entered by the highest court in the State of Oklahoma unreasonably and

unnecessarily taking the property and impairing the contractual rights of the petitioners under 52 OSA Secs. 286.1 to 286.17, known as the Unitization Act. That the said Act authorizes such taking of the property and impairment of the contractual rights of the petitioners in a manner which

1. Denies the petitioners the equal protection of the laws and unnecessarily and unreasonably discriminates against them;

2. And unnecessarily and unreasonably takes their property and impairs their contractual rights without due process of law or just compensation;

all in violation of Sec. 10, Art. I of or the Fifth Amendment to, or the Fourteenth Amendment to the United States Constitution.

(b)

Statutory Provisions Believed to Sustain Jurisdiction

The statutory provisions believed to sustain the appellate jurisdiction are Title 28 USCA Sec. 1257:

"State courts; appeal; certiorari

Final judgments or decrees rendered by the highest court of a State in which a decision could be had, may be reviewed by the Supreme Court as follows:

(1) By appeal, where is drawn in question the validity of a treaty or statute of the United States and the decision is against its validity.

(2) By appeal, where is drawn in question the validity of a statute of any state on the ground of its being repugnant to the Constitution, treaties or laws of the United States, and the decision is in favor of its validity.

(3) By writ of certiorari, where the validity of a treaty or statute of the United States is drawn in question or where the validity of a State statute is drawn in

question on the ground of its being repugnant to the Constitution, treaties or laws of the United States, or where any title, right, privilege or immunity is specially set up or claimed under the Constitution, treaties or statutes of, or commission held or authority exercised under, the United States. June 25, 1948, c. 646, 62 Stat. 929."

and 28 USCA 2101(c):

"Any other appeal or any writ of certiorari intended to bring any judgment or decree in a civil action, suit or proceeding before the Supreme Court for review shall be taken or applied for within ninety days after the entry of such judgment or decree. A justice of the Supreme Court, for good cause shown, may extend the time for applying for a writ of certiorari for a period not exceeding sixty days."

The following decisions also sustain the appellate jurisdiction:

Champlin Refining Co. v. *Corporation Commission*, 286 U. S. 210; 76 L. Ed. 1062;

Thompson v. *Consolidated Gas Utilities*, 300 U. S. 55, 81 L. Ed. 510;

Hunter Co. v. *McHugh*, 320 U. S. 222, 88 L. Ed. 5.

(c)

The State Statute and Order of the Corporation Commission of the State of Oklahoma Issued Thereunder, the Validity of Which Is Involved.

The statute of the State of Oklahoma, the validity of which is involved, is hereto attached as Appendix "A" and made a part hereof.

The judgment and order of the Corporation Commission of the State of Oklahoma made pursuant to said statute,

the validity of which is involved, and the "Plan" therein approved, is hereto attached and made a part hereof and marked Appendix "B".[1]

(d)

Date of Decisions and Date of Petition for Appeal Therefrom

The date of the decree sought to be reviewed herein is May 22, 1951, and the date upon which the application for appeal is presented is July 30, 1951.

(e)

Nature of the Case and Rulings of the Court Bringing the Case Within the Jurisdictional Provisions Relied upon

The proceeding was brought before the Corporation Commission of the State of Oklahoma, on October 22, 1946, under authority of the Unitization Act of Oklahoma, by the defendants-in-error, the operator lessees of about 75% of the area of 3700 acres of land which they claimed overlaid the common source of supply of oil and gas known as the West Medrano Pool, Cement Field, Caddo County, Oklahoma. The West Medrano Pool was discovered in the month of October, 1936. At the time the proceeding was brought 37 oil wells and 19 gas wells had been drilled to depths ranging from 4500' to 6241' by the various separate lessee operators and were producing oil and gas in widely varying quantities. The lands are divided into a large number of farms of different size and shape and are owned in severalty by a large number of different owners, and the farms were leased for oil and gas purposes to various

[1] (CLERK'S NOTE.—These documents are printed as appendices to this statement as to jurisdiction in *Palmer Oil Corp.* v. *Amerada Petroleum Corp.*, No. 301, October Term, 1951.)

different lessees. The purpose of the proceeding was:

1. To cancel all the oil and gas leases covering the area claimed by the applicants to constitute an entire oil and gas common source of supply, and create in lieu thereof one oil and gas lease to remain in force as long as oil or gas is produced from any part thereof and providing for the payment of ⅛ royalty and dividing the same among the royalty owners.

2. To nullify all of the implied covenants of the leases without compensation.

3. To nullify all express provisions of the leases without compensation.

4. To authorize one operator to take title and possession of all property, wells and structures and operate the same.

5. To obtain approval of the Corporation Commission of Oklahoma, (which approval the Commission was, by the terms of the Unitization Act, bound and required to give.)

a. Of the division made by applicants of the oil and gas to be produced from the pool, and

b. Of the compensation fixed by the applicants for the wells, machinery and structures so taken all according to the "Plan" of division and compensation previously prepared by the applicants and filed with their petition.

The petitioners, who were the lessors of the land involved, with the exception of Tom Potter, who was a lessee, and Clyde Kahle, who was an over-riding royalty owner, and other interested persons appeared, answered and objected.

The Corporation Commission made the order as requested in the application and approved the "Plan" as the Unitization Act required it to do. Although the constitutional questions were raised before the Commission they were not passed upon. The petitioners appealed to the Supreme Court of the State of Oklahoma asking reversal

of the Order on the grounds that the Unitization Act and the Order are in violation of Sec. 10 Art. I of, or the Fifth Amendment, or the Fourteenth Amendment to the United States Constitution for the reason that they (1) unreasonably impair the petitioners' contracts, (2) unreasonably take petitioners' property for private or public use without compensation, (3) unreasonably give the defendants-in-error the right, but deny the petitioners the right to set the Unitization Act in operation, (4) unreasonably give the defendants-in-error the right, but deny the petitioners the right to file a "Plan" with the Corporation Commission dividing the oil and gas and providing for compensation for property taken by the defendants-in-error; which is also an unreasonable delegation of legislative and judicial power. That none of the four above named constitutional guaranties need be violated in order to effectively conserve oil and gas and operate a common source of supply of oil and gas as one unit. However, the Supreme Court of Oklahoma held that the Unitization Act and the Order of the Corporation Commission taking the petitioners' property and contractual rights in such manner was not violative to the Constitution of the United States, — Okla. —; 231 Pac. (2d) 997.

(f)

Grounds upon Which It Is Contended the Questions Involved Are Substantial

The impairment of the petitioners' contractual rights and taking their property without compensation is substantial in that

1. Under the implied covenants of their oil and gas leases, the lessor petitioners could compel the lessee to protect their land against drainage of oil or gas, to fully develop the premises for oil and gas, and to produce and market the

oil and gas therefrom. The Unitization Act and Order #20289 expunge these covenants. The rights were valuable because by their use the lessors could force the lessees to drill as many wells as would fully develop the lessors' oil and gas rights, thus insuring a diligent development and operational program and timely production of the oil and gas. The implied covenants are an onerous burden to the lessees because under the covenant, if the lessee does not diligently fully develop the lessor's property, his lease is subject to cancellation and therefore, if the lease is at all worth developing, he will drill as many wells as there are spacing units on his oil and gas lease, thereby laying out considerable money and investment. With the abrogation and expungement of the implied covenants, the lessee may develop the land as slowly as he chooses and by wider well spacing than is required under the statutes and orders of the Corporation Commission produce the oil and gas as slowly as he chooses, having no regard to the interest of the lessor, as he was, under the law of implied covenants, required to do. The leases on the lands involved were all made prior to the passage of the Unitization Act. Neither the Act nor the Order nor the "Plan" provide for any compensation to the lessor for the loss of these rights.

The leases are all similar in form, a copy of one of the leases is hereto attached, marked Appendix "E," and made a part hereof.[2]

2. Under the express terms of the oil and gas leases, the lessor petitioners are entitled to the free use of gas from the wells for light and heat on the premises. This right is a considerable inducement to the execution of the leases in the first instance and has a real substantial value to the land owners, not only in convenience, but also in money.

---

[2] (CLERK'S NOTE.—This lease is printed as an appendix to the statement as to jurisdiction in the case of *Palmer Oil Corp.* v. *Amerada Petroleum Corp.*, No. 301, October Term, 1951.)

If the lease, according to its terms, is extended beyond its primary term of years by the production of oil and gas from the premises, to a term as long as oil or gas is produced, then the lessor is assured of the full use of gas on the premises. Such a contingency necessitates the drilling of a well by the lessee. On the other hand, if such well is not drilled within the primary term of years of the lease, the lease expires and the lessor may lease it again. Under the Unitization Act and Order #20289 of the Corporation Commission, the lease is extended beyond the primary term of years without drilling a well as is required by the lease thereby relieving the lessee of the onerous burden of drilling a well and depriving the lessor of the use of free gas on the premises. Neither the Act nor the Order provides for compensation for the expungement of this right and the relief of the lessee's obligation.

3. Under the express terms of the lease, unless the lessee drills a well and produces oil or gas in paying quantities within the primary term of years of the lease, the lease expires. Under the Unitization Act and Order #20289 of the Corporation Commission, the lease is extended as long as oil or gas is produced from the common source of supply. No bonus or compensation is paid lessor for the extraction of this property right, although lease bonuses in proven fields such as the one under consideration have brought substantial sums of money and even sums of great magnitude.

4. Under the express terms of the lease, the same expires when oil or gas is no longer produced from the premises. Under the Unitization Act and Order #20289, the lease is extended as long as oil or gas is produced from the common source of supply. Again appears the extraction of a valuable right without compensation whatsoever. No provision is made in the Act, Order or "Plan" for compensation of

any kind to the lessor for his loss of the contractual rights hereinabove set forth in the preceding sub-paragraphs 1, 2, 3 and 4, all of which is to the enrichment of the defendants-in-error and none of which are essential to the unit operation of the Medrano Pool.

5. Under the express terms of the lease, the lessee is entitled to 1/8 of the oil and gas produced from his land or interest in the mineral estate. This contractual right is expunged by the Act and Order and there is substituted in lieu thereof 1/8 of whatever oil and gas is assigned by the defendants-in-error in their "Plan" to the owner of the oil and gas lease covering the land. The lessor is not given the same right which the lessee is given, i.e., to file a "Plan" fixing the fractional part of oil and gas produced from the entire common source of supply to which the lessor is entitled, nor is the Corporation Commission required by the Act to either approve or reject such a "Plan".

The denial of procedural due process of law and equal protection of the laws and equal laws to the petitions is substantial in that all of the property rights and contractual rights above set forth in sub-paragraphs 1, 2, 3, 4 and 5 are unreasonably and unnecessarily taken without due process of law and without equal protection of the law to the petitioner and in addition thereto the well, machinery, installations and structures of one of the minority lessees of the value of $80,000 per well are taken without adequate compensation and at the same time discriminating against the minority lessee. The said minority lessee is allowed $18,000 for his well, machinery, installations and structures, whereas all other lessees were allowed $80,000 for similar wells. The minority lessee was not permitted by the Unitization Act to file with the Corporation Commission a "Plan" setting out the value of his well, which "Plan" the Commission must allow or reject. The majority lessees are

actually and in practice permitted to fix the compensation which is a delegation of legislative or judicial power.

(g)

Stage of Proceedings and Manner in Which Federal Questions Were Raised

The petitioners first raised the Federal Questions by filing Answers to the application of the defendants-in-error before the Corporation Commission of the State of Oklahoma on May 21, 1947, leave having been first granted to file such answers. The same Federal Questions were again raised on Motion for Judgment before the Corporation Commission and in the Motion for New Trial filed before the Corporation Commission. The questions were again raised in their Petition in Error filed in the Supreme Court of the State of Oklahoma appealing from the judgment of the Corporation Commission and in their Briefs filed in the Supreme Court of Oklahoma and in Oral Argument before the Supreme Court of Oklahoma, and again in the Petition for Rehearing filed before the Supreme Court of the State of Oklahoma after the decision of said court was first made.

(h)

Manner in Which the Questions Involved Were Passed upon by the Court

The Corporation Commission of the State of Oklahoma did not pass upon the Federal questions raised as hereinabove set forth in Paragraph (g) as appears from Order #20289.

The Supreme Court of the State of Oklahoma by opinion and decision of March 20, 1951, held that the Unitization Act and Order #20289 did not violate Sec. 10 Art. I of, or the 5th, or 14th Amendment to the United States Constitu-

tion, and by Order of May 22, 1951, denying Petition for Rehearing, and by order of the 5th day of June, 1951, denying application to file Second Amended Petition.

(i)

Excerpts from Record Bringing Cause Within Statutes Conferring Jurisdiction on Supreme Court

1 a. Excerpt from Answer of oil and gas lessors filed with Corporation Commission May 21, 1947:

> "2. For further defense, the undersigned allege that the statute of the State of Oklahoma, being Title 52, Sections 286.1 to 286.17, Oklahoma Statutes Annotated, upon which the petitioners base their application for the creation of the West Cement Medrano Unit, violates:
>
> (a) The Fourteenth Amendment to the United States Constitution, Section 1, in that it attempts to take the property of the undersigned without due process of law and denies to the undersigned the equal protection of the laws.
>
> (b) The Fifth Amendment to the Constitution of the United States in that it seeks to take the property of the undersigned without due process of law and without just compensation.
>
> (c) Article 1, Section 10 of the United States Constitution, in that said statute impairs the obligation of the contract between the undersigned lessors and the petitioning lessees.
>
> (d) The Fourteenth Amendment to the United States Constitution, Section 1, prohibiting abridgment of privileges and immunities of citizens of the United States." (C.M. 1000-1001.)

1 b. Excerpts from Answer of Clyde Kahle, overriding royalty owner, filed May 21, 1947:

(same as allegation in paragraph 1 a)

1 c. Excerpts from Answer of Tom Potter, minority lessee, filed May 21, 1947:

(same as allegation in paragraph 1 a)

Note: Corporation Commission of the State of Oklahoma did not pass upon or even mention constitutional questions.

3. Excerpt from Petition in Error filed in Supreme Court of the State of Oklahoma:

"1. The said Commission erred in rendering judgment for the defendants-in-error in that the Statutes of Oklahoma, Title 52, Sections 286.01 to 286.17 Oklahoma Statutes Annotated and upon which said Commission based its authority to render said judgment, violate the Constitution of the United States of America and particularly violate the following amendments and articles thereof, to-wit:

(a) The Fourteenth Amendment to the United States Constitution, Section 1, in that said statutes attempt to take the property of the plaintiff in error without due process of law and denies to them the equal protection of the laws.

(b) The Fifth Amendment to the Constitution of the United States in that said statutes seek to take the property of the plaintiff in error without due process of law and without just compensation.

(c) Article 1, Section 10 of the United States Constitution, in that said statutes impair the obligation of the several separate contracts between the Lessor, Plaintiff in error, and the Lessee, defendants in error.

(d) The Fourteenth Amendment to the United States Constitution, Section 1, prohibiting abridgment of privileges and immunities of citizens of the United States."

4. Excerpt from Opinion of the Supreme Court of Oklahoma denying petitioner's contention that Oklahoma's Unitization Act violates United States Constitution:

> "3. House Bill 339 of the 1945 Legislature (Tit. 52 O. S. Supp. 1947, Secs. 286.1 to 286.17), known as the Unitization Act is not violative of Secs. 7, 15, 23 or 24 of Art. II, or Sec. 1 of Art. IV or Secs. 1 or 51 of Art. V. of the Constitution of the State of Oklahoma, nor violative of Sec. 10 of Art. I, of, or of the Fifth or Fourteenth Amendments to the Constitution of the United States."

5. Excerpt from Petition for Rehearing filed in Supreme Court of the State of Oklahoma:

> "The Plaintiffs in Error call the Honorable Court's attention to the fact that said decision overlooked the questions decisive of the case and duly submitted by counsel as follows:
>
> ". . .' 2. The 14th Amendment to the Constitution of the United States, Section 1, quotes as follows:
>
> 'All persons born or naturalized in the United States and subject to the jurisdiction thereof, are citizens of the United States and of the state wherein they reside. *No state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States, nor shall any state deprive any person of* life, liberty, or *property, without due process of law, nor deny to any person within its jurisdiction the equal protection of the laws.*'
>
> "(a) The Unitization Act provides that it can be set in operation only by lessees of 50% of the area of the common source of supply and authorizes said majority owners to expunge the contracts of the lessors and lessees depriving the lessors of valuable contractual rights and relieving the lessees from heavy contractual burdens under the leases and authorizing the said majority owners to take the lands and prop-

erty of the lessees and use the same for oil and gas purposes and to fix the compensation of the lessors for the lessors or the minority lessees the right to place the act in operation or to fix the compensation of the parties involved for the loss of their royalty or any other contractual rights or property which patently denies to the lessors and to the minority owners, all of whom are citizens of the United States, the equal protection of the laws as provided in the above provisions of the United States Constitution. . . .

"Article 1, Section 10 of the United States Constitution quotes as follows:

"*No state shall* enter into any treaty, alliance or confederation; grant letters of marque and reprisal; coin money; emit bills of credit; make anything but gold and silver coin a tender of payment of debts; *pass any* bill of attainder, ex post facto law, or *law impairing the obligation of contracts;* or grant any title of nobility."

"(The latter part of the above Section has been omitted.)

"The Unitization Act violates the Constitution of the United States in that the above quoted Section thereof prohibits any State from passing any law impairing the obligation of contract. An exception has been made to said provision of the Constitution of the United States which permits the States in the exercise of the police power to enact laws impairing contracts provided the exercise of such power is reasonable and nondiscriminatory. The purpose of the exercise of the police power by the State of Oklahoma under the Unitization Act is to insure unit operation of common sources of supply of oil and gas in proper cases. In order to accomplish such unit operation it is not necessary to deprive the lessor of his right to the termination of the lease he has given to the lessee for failure to produce oil or gas from the premises, because immediately upon the termination of the lease under its own terms, the lessor and owner of the minerals may be substituted for the former lessee in the unitization program with-

out affecting in any way the unit operation of the common source of supply. The Unitization Act deprives the lessor of his right to terminate his oil and gas lease for failure of the lessee to produce oil or gas from the premises after the expiration of the primary term. It has always been the very essence of 'unless' oil and gas leases that the lessee was obligated to spend large sums of money in the development of the premises for oil and gas in order to extend the lease beyond the primary term and that unless the lessee did drill on the lands and produced oil and gas from the premises within the primary term of the lease that the said lease would expire and the oil and gas rights revert to the lessor. The oil and gas rights are very valuable otherwise, the lessees would not be engaged in such an extensive and expensive operations and litigation. The lessor has the right to hold the lessee to the terms of the contract as they have been fixed and construed for years by the courts of this State, particularly since the enforcement of such contractual rights and obligations in no way interfere with, or impair the unit operation of, any common source of supply which may be included in part under such oil and gas lease.

"The Unitization Act expunges the implied covenants of the oil and gas leases which require the lessee to fully develop and market and to protect the lease against drainage. It is not necessary to the unit operation of a common source of supply to strike out these covenants. The lessee can still be required to fully develop the common source of supply, to market the oil and gas therefrom, and to protect the same from drainage without affecting, in any way the unit operation of said common source of supply, yet the Unitization Act specifically provides for the expungement of implied covenants of the oil and gas leases. The act further provides that the oil and gas leases, after unitization, should constitute one single oil and gas lease and there is no reason why the said one single lease should not bear all three of the said implied covenants. The act further provides that a part of a common source of supply

may be unitized which patently leaves open an avenue for the drainage of oil and gas to the area of the common source of supply not included in the unit. Drainage from the common source of supply may occur through a well bore drilled through the common source of supply to another common source of supply lying either above or below the unitized common source of supply. It is evident from the physical nature of things that the implied covenants requiring full development subject to the conservation laws of the State, protection against drainage, and marketing of the oil and gas may be retained in the single lease contract and enforced against lessees without, in any way, interfering with the unit operation of the common source of supply.

"There are also numerous special provisions in the various oil and gas leases which provided, among other things, that the lessor shall have the free use of gas in houses and structures located on the premises. This particular provision is very important to the lessor and was a moving consideration in his execution of the lease. The Unitization Act expunges this provision but such expungement in no way affects the unit operation of the common source of supply. Inasmuch as many of the gas wells will be closed in it might cause the lessee to pipe gas to the lessor's premises, however, this expense would be, as the majority lessees say 'de minimus.'"

6. Excerpt from Order of Supreme Court of the State of Oklahoma denying petitioners' Petition for Rehearing in Supreme Court of the State of Oklahoma:

"IN THE SUPREME COURT OF THE STATE OF OKLAHOMA, May 22, 1951.

THE CLERK IS HEREBY DIRECTED TO ENTER THE FOLLOWING ORDERS:

. . . 33,336 The Palmer Oil Corporation, et al. v. Phillips Petroleum Co.

All petitions for rehearing and application for oral argument in the above styled and numbered causes denied."

7. Excerpt from Application for Leave to File Second Petition for Rehearing filed in Supreme Court of the State of Oklahoma:

"That the opinion of this Court is in conflict with . . . the Constitution of the United States, and the decision of the Supreme Court of the United States in the case of Mullane vs. Central Hanover Bank & Trust Company, 339 U. S. 306, decided April 24, 1950, as more fully appears from the attached Second Petition for Re-Hearing."

8. Excerpt from Order of Supreme Court of State of Oklahoma denying Application for Leave to File Second Petition for Re-Hearing:

"IN THE SUPREME COURT OF THE STATE OF OKLAHOMA, June 5, 1951.

THE CLERK IS HEREBY DIRECTED TO ENTER THE FOLLOWING ORDERS:

. . . 33,336 The Palmer Oil Corp., et al. v. Phillips Petroleum Co. Application for Leave to File Second Amended Petition for Re-Hearing in the above styled and numbered cause denied."

(j)

Copy of Opinions on Rendition of Judgment

A copy of the opinion of the Supreme Court of the State of Oklahoma is hereto attached, marked Appendix "C" and made a part hereof.*

Copies of the opinions of the dissenting Justices of the Supreme Court of the State of Oklahoma are hereto attached, marked Appendix "D" and made a part hereof.*

(k)

Cases Believed to Sustain Jurisdiction

The appeal having been perfected within ninety days from date on which the judgment of the Oklahoma Supreme Court became final is timely. (Sec. 2101, Tit. 28, U. S. Code Revised.)

Appeal is the proper remedy for review of a decision of a state court of last resort in favor of the validity of state statutes and of administration orders issued pursuant to legislative authority claimed to be delegated by such statutes where the statutes and the orders thereunder issued are alleged to contravene the Federal Constitution (Sec. 1257, Tit. 28, U. S. Code Revised).

Hamilton v. *Regents of the University of California*, 293 U. S. 245, 79 L. Ed. 343;

Charleston Federal Savings & Loan Association v. *Alderson*, 324 U. S. 182, 89 L. Ed. 857;

Market Street Railroad Co. v. *Railroad Commission of California*, 324 U. S. 548, 89 L. Ed. 1171;

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* (CLERK'S NOTE.—These opinions are printed as appendices to the statement as to jurisdiction in the case of *Palmer Oil Corp.* v. *Amerada Petroleum Corp.*, No. 301, October Term, 1951.)

Milk Wagon Drivers Union v. *Meadowmoor Dairies*, 312 U. S. 287, 85 L. Ed. 836;

Postal Telegraph Cable Company v. *Newport*, 247 U. S. 464, 62 L. Ed. 1215;

Sterling v. *Constantin*, 287 U. S. 378, 77 L. Ed. 375;

Pollock v. *Williams*, 322 U. S. 4, 88 L. Ed. 1095;

Williams v. *North Carolina*, 325 U. S. 226, 89 L. Ed. 1577;

Hoover & A. Company v. *Evatt*, 324 U. S. 652, 89 L. Ed. 1252;

United Gas Public Service Company v. *Texas*, 303 U. S. 123, 82 L. Ed. 702;

Memphis Natural Gas Company v. *Beeler*, 315 U. S. 649, 83 L. Ed. 1090;

Broad River Power Co. v. *South Carolina*, 281 U. S. 537, 74 L. Ed. 1023;

Greenough v. *Tax Assessor*, 331 U. S. 486, 91 L. Ed. 1621, 1630.

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No. 301.

IN THE

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1951.

THE PALMER OIL CORPORATION, PAUL STERBA AND PAUL STERBA, JR., A MINOR BY AND THROUGH HIS FATHER AND NEXT FRIEND, PAUL STERBA,
APPELLANTS,

vs.

AMERADA PETROLEUM CORPORATION, ANDERSON-PRICHARD OIL CORPORATION, CITIES SERVICE OIL COMPANY, ET AL.,
APPELLEES.

APPEAL FROM THE
SUPREME COURT OF THE STATE OF OKLAHOMA

BRIEF OF APPELLANTS,
THE PALMER OIL CORPORATION, PAUL STERBA AND PAUL STERBA, JR., A MINOR, BY AND THROUGH HIS FATHER AND NEXT FRIEND, PAUL STERBA.

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24 ALR 307	36
78 ALR 34	36
86 ALR 418	36
86 ALR 431	36
13 ALR (2d) 1095	36
"A Form for an Oil and Gas Conservation Statute", by T. Murry Robinson, et al., Legal Committee of Interstate Oil Company Commission	41
Compulsory Unit Operation of Oil Pools, 17 ABAJ 393	38
"Conservation of Oil and Gas a Legal History", 394-403	40, 41
12 Fed. Reg. 528:2	42
Ford, "Controlling Oil Production," 30 Mich. L. Rev. 1170	39
Garvin, "The Effect of Field Unit Operation upon the Royalty Interest and the Royalty", 21 Okla. St. B. J. 1793, 1798, 1799	30
Gibbens, "The Effect of Conservation Legislation on Implied Covenants in Oil and Gas Leases", 4 Okl. L. Rev. 337, 339	32
p. 337, 362	41
Glassmire, Oil and Gas Leases and Royalties, Sec. Ed., Par. 16, p. 60	32, 58
Glassmire, Oil and Gas Leases and Royalties, 2nd Ed., Sec. 11 p. 41	37
Green, "Proposed Amendments to the Unitization Law", 21 Okl. B. J. 1793 and 1801	41
M. L. Hader, "The Principles of Petroleum Engineering, Which, If Properly Understood and Applied, Should Uphold the Constitutionality of Any Reasonable State Pooling Statute Designed to Conserve, Maintain, and Require the Efficient Use of the Reservoir Energy of an Oil Pool to Enlarge the Ultimate Recovery", Pamphlet American Bar Assn., Section of Mineral Law, Annual Meeting Kansas City, 1937, page 25	39

AUTHORITIES—(Continued)

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Hardwicke, Antitrust Laws, et al. v. Unit Operation of Oil or Gas Pools	39, 41
Hardwicke, "Unitization Statutes: Voluntary Action or Compulsion", 24 Rocky Mountain L. Rev. 29	41
Jacobs "Unit Operation of Oil and Gas Fields, 57 Yale L. J. 1205	41
King, "Pooling and Unitization of Oil or Gas Lease", 46 Mich. L. Rev. 311, 312	41, 43
70 L. Ed. 322	64
Legal History of Conservation of Oil and Gas, A Symposium, American Bar Assn., 1938	36
Maurice H. Merrill, a Book Review on "A Form for An Oil and Gas Conservation Statute" 4 Okl. L. Rev. 272, 274	31
Merrill, "Implied Covenants, Conservation and Unitization", 2 Okl. L. Rev. 469	41
Merrill, "Implied Covenants and Secondary Recovery", 4 Okl. L. Rev. 177, 189, 196, 198	41, 59
Merrill, "Covenants Implied in Oil and Gas Leases", (2d Ed., Sec. 15)	58
Merrill, "Stabilization of the Oil and Gas Industry and Due Process of Law", 3 S. Cal. L. Rev. 396, 408, 409-410	59, 64
Myers, "Spacing, Pooling and Field-wide Unitization", 18 Miss. L. J. 267	41
Northcutt Ely, "Legal Restraints on Drilling and Production", Pamphlet American Bar Assn., Section of Mineral Law, Annual Meeting Kansas City, 1937, page 45	39
"Oil and Gas Production", Engineering Committee, Interstate Oil Compact Commission	41
21 Okl. B. J. 1796	37
21 Okl. Bar Journal 1802	59
Oklahoma Constitution, Article IX, Sec. 15	27
21 Okl. St. B. J. 1801, 1802	31

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"Petroleum Conservation", by American Institute of Mining and Metallurgical Engineers	41
Proceeding of First Annual Institute on Oil and Gas Law, South Western Legal Foundation, Dallas, Texas, pages 1-96, 519, 545	41
Summers, Law of Oil and Gas, Vol. 1, Sec. 106	36
Summers, Law of Oil and Gas, Vol. 1, Secs. 104, 106	37, 62
"The Conservation of Oil" 51 Har. Law Rev. 1209	39
The Oil and Gas Journal, Vol. 50, No. 38, p. 218, January 28, 1952	39
Unit Operation at Cotton Valley: An Alleged Violation of the Sherman Act, 24 Tulane L. Rev. 76	41
Veasey, Legislative Control of the Business of Producing Oil and Gas; Reports of the American Bar Assn., Vol. 52, pages 577, 628	38
Voorhees, "Techniques of Field Wide Unitization", 24 Rocky Mountain L. Rev. 14	41

IN THE

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1951.

No. 301.

THE PALMER OIL CORPORATION, PAUL STERBA AND PAUL STERBA, JR., A MINOR BY AND THROUGH HIS FATHER AND NEXT FRIEND, PAUL STERBA,
APPELLANTS,

vs.

AMERADA PETROLEUM CORPORATION, ANDERSON-PRICHARD OIL CORPORATION, CITIES SERVICE OIL COMPANY, ET AL.,
APPELLEES.

APPEAL FROM THE
SUPREME COURT OF THE STATE OF OKLAHOMA

BRIEF OF APPELLANTS,
THE PALMER OIL CORPORATION, PAUL STERBA AND PAUL STERBA, JR., A MINOR, BY AND THROUGH HIS FATHER AND NEXT FRIEND, PAUL STERBA.

OPINION BELOW.

The opinions, majority and dissenting, of the Supreme Court of Oklahoma (R. 28-78) are reported in .... Okla. ...., 231 P. 2d 997.

JURISDICTION.

The judgment and decision of the Supreme Court of Oklahoma was entered on March 20, 1951. (R. 28) The finality of the judgment was stayed until June 5, 1951, by order of the Supreme Court of Oklahoma and the filing by appellants of petition for rehearing and application for leave to file second petition for rehearing. (R. 78, 116, 130) Appellants' Petition for Appeal to the Supreme Court of the United States was presented and allowed on July 30, 1951, within ninety days from the final judgment, decree and decision sought to be reviewed (R. 131, 136), and "Probable Jurisdiction" in this cause was noted by the Supreme Court of the United States on the 14th day of January, 1952.

The jurisdiction of the Supreme Court of the United States rests on 28 U. S. C. A. 1257(2). See also Rules 36, (1), 12 (1) (2) (3) (4) (5) (6), 9, and 10 (1) (2) (3) (4) (5).

INTRODUCTORY STATEMENT.

The Supreme Court of Oklahoma has sustained an Order of the Corporation Commission of Oklahoma approving a Written Plan compelling unitization of the Medrano sand bodies in the West Cement Field, in Caddo County, Oklahoma, underlying some 3,700 surface acres, such Plan being promulgated by a certain percentage of the oil and gas lease area owners within such proposed unit as provided by the Oklahoma Statute (House Bill No. 339, passed in 1945 and effective July 26, 1945,) complained of. The effect of such Compulsory Unitiza-

tion Plan is to completely dispossess each oil and gas lease owner in the unit area of its operation rights and take away the property and contract rights of the landowner lessors or royalty owners and oil and gas lease lessees. The rights of appellants Sterbas, as landowner and lessor in oil and gas lease made in 1936, and of The Palmer Oil Corporation, as lessee-assignee under said oil and gas lease on the Sterba land, were established and Palmer drilled and completed six oil and gas test wells on said leasehold prior to 1945.

QUESTION PRESENTED.

Whether House Bill No. 339 of the 1945 Oklahoma Legislature (O. S. Supp. 1949, Title 52, Sec. 286.1 to Sec. 286.17, inclusive), known as the Compulsory Unitization Act, and the Order of the Corporation Commission of Oklahoma, No. 20289, entered in Cause CD No. 1308, approving the Written Plan of Unitization of the Medrano sand bodies in the West Cement Field in Caddo County, Oklahoma, as interpreted and applied to the ownership and operations of The Palmer Oil Corporation and other appellants, under the undisputed and indisputable evidence, constitutes an improper and unreasonable exercise of the police power of the State of Oklahoma, in violation of the due process, equal protection and contract clauses of the Constitution of the United States.

STATUTES INVOLVED.

The Statutes and Orders involved are as follows:

1. House Bill No. 339 of the 1945 Oklahoma Legislature (O. S. Supp. 1949, Title 52, Sec. 286.1 to Sec. 286.17 inclusive) is printed in Appendix "A", pages 77 to 91.

2. The Order of the Corporation Commission of the State of Oklahoma, Number 20289 entered in Cause CD No. 1308, is printed in Appendix "B", pages 92 to 104.

3. The Written Plan of Compulsory Unitization is printed in Appendix "C", pages 105 to 157.

SPECIFICATION OF ERRORS.

The Supreme Court of the State of Oklahoma erred in deciding that Order No. 20289 of the Corporation Commission of Oklahoma, in Cause CD No. 1308, and the Plan of Compulsory Unitization approved thereby and the statutes (House Bill 339 of the 1945 Legislature, Title 52, Oklahoma Statutes Supplement 1949, Sections 286.1 to 286.17, both inclusive), upon which said Court determined said Order and Plan were authorized, as construed and applied to appellants by the decision and judgment of said Court under the undisputed and indisputable evidence in the record, did not deprive appellants of their property without due process of law or deny to them the equal protection of the laws in contravention of the provisions of Section I of the Fourteenth Amendment to the Constitution of the United States, and did not impair the obligation of appellants' leasehold contract in contravention of Section 10, Article I of the Constitution of the United States, because

(a) Said Order, Plan and Statutes are an unreasonable exercise of the police power.

(b) Said Order and the findings in support thereof are contrary to the undisputed and indisputable evidence in the record in that the record shows no waste of oil or gas, as defined or contemplated by the Oklahoma Conservation Statutes, was being committed, that correlative rights of producers, landowners and royalty owners in and to oil and gas were being protected and conserved in accordance with the general conservation statutes of the State of Oklahoma and the subsisting Orders of the Commission thereunder.

(c) Said Order, Plan and Statutes completely deprive appellants of their property and places it in the hands of private parties to control its management, further development and operation.

(d) Said Order, Plan and Statutes completely divest personal, property and contract rights vested and established long before the making of said Order and Plan and the enactment of said statutes.

(e) Said Statutes are too broad, vague and unspecific to constitute any reasonable guide to the Commission in making of any Order approving any Plan of Unitization thereunder.

(f) The undisputed evidence establishes that there was no single common source of supply of oil and gas, which is necessary to justify any type of oil and gas conservation statutes.

(g) Said Order, Plan and Statutes provide for and constitute more than mere regulations of the business of producing oil and gas, completely taking away from appellants their contractual rights under the oil and gas lease and their rights to possess and develop the property for oil and gas, substituting therefor merely a right to share in the proceeds arising from oil and gas production from the entire unit.

(h) Appellants, Paul Sterba and Paul Sterba, Jr., as owners of the land and royalty, are not, under the Statutes, Order or Plan of Unitization, given any voice in respect to any matter concerning the compulsory unitization.

(i) Said Statutes, Order and Plan of Unitization provide for the taking of private property not for a public use or public purposes, but for private purposes and private gain.

(j) Under said statutes percentages of private parties are authorized to decide whether a particular oil and gas field should be unitized and, if so, the type or plan of unitization, and their private decision, at their will, is submitted to the Commission for approval; if approved by the Commission, a certain percentage of private parties still have the right to completely nullify the Plan or amend the Plan, or enlarge the Plan, and in any event, control the future operations under the Plan and the winding up and closing thereof; the Commission has no right of its own to initiate the proceedings or formulate the Plan, amend

or change the Plan, or otherwise control the Plan, except its power under the general conservation laws.

(k) Said Statutes, Order and Plan provide for an unlawful delegation to private parties of the authority to determine legislative policy on any oil field within the State of Oklahoma, and particularly the West Cement Field.

(l) Said Statutes, Order and Plan of Unitization unlawfully delegate arbitrary legislative authority to certain percentages of private persons to determine the legislative policy in respect to any oil field within the State of Oklahoma, and particularly the West Cement Field.

(m) Said Statutes, Order and Plan unlawfully delegate to private parties the judicial power of determining the rights of royalty owners and minority lessees in respect to any oil field within the State of Oklahoma, and particularly the West Cement Field.

(n) Said Order and Plan unlawfully delegate arbitrary judicial and legislative power to private parties to determine the rights of royalty owners within any oil field of the State of Oklahoma, and particularly the West Cement Field.

(o) Said Statutes, Order and Plan provide for drastic changes in contractual and property rights which are not reasonably necessary to promote conservation of oil and gas or prevent waste thereof.

(p) Said Statutes, Order and Plan provide for arbitrary, unreasonable and capricious procedures and methods by which private parties determine rights of other private parties in and to any oil field of the State of Oklahoma, and particularly the West Cement Field.

(q) The Order and Plan are unreasonable, arbitrary and capricious and are not based upon the undisputed and indisputable evidence in the record.

(r) The undisputed and indisputable evidence showed conclusively that geological faults separated the Medrano Sand in the West Cement Field into several, separate common sources of supply.

STATEMENT.

This appeal is from the final judgment of the Supreme Court of Oklahoma in Cause No. 33336 and Cause No. 33708, consolidated in that Court. (R. 16)

Cause No. 33336 in the Supreme Court of Oklahoma was originally commenced as Cause CD No. 1308 before the Corporation Commission of the State of Oklahoma, hereinafter referred to as "Commission", by the filing of a petition (R. 173) on October 22, 1946, by Amerada Petroleum Corporation, Anderson-Prichard Oil Corporation, Phillips Petroleum Company, Ray Stephens, Inc., Stephens Petroleum Company and Magnolia Petroleum Company (hereinafter referred to as proponents or appellees) to enforce a compulsory unitization of all oil and gas leases and royalty or landowners' rights in an area alleged to contain the "Medrano Sand" of the

West Cement Field in Caddo County, Oklahoma, in accordance with a Written Plan prepared and submitted by said petitioners under the purported authority granted by the "Compulsory Unitization Act". (R. 173-183, 1250-1300)

The appellant, The Palmer Oil Corporation, hereinafter referred to as "Palmer", was the owner of an oil and gas leasehold within the area sought to be unitized, and the appellants, Paul Sterba and Paul Sterba, Jr., hereinafter referred to as "Sterbas", were the landowners owning the royalty rights under Palmer's said oil and gas leasehold. (Appendix "D", page 158, R. 1523-1526, 1477)

Palmer filed a written protest in Cause No. 33336 to the petition and proposed Plan of Unitization, alleging, among other things, that such compulsory unitization would contravene and violate the due process, equal protection and contract clauses of the Constitution of the United States as an improper exercise of the police power and that said Medrano Sand did not constitute a single common source of supply. (R. 255) Protests were also filed by other lessees and land owners. (R. 331, 821, 825)

Hearings were held before the Commission at various times, beginning December 9, 1946, and ending July 25, 1947. (R. 184, 201, 330, 333, 368, 430, 502, 896, 1092) The initial Plan of Compulsory Unitization was amended by its proponents on July 18, 1947, in order to give effect to a change of information or facts occasioned by the drilling and completion, on or about February 2,

1947, of Palmer's Sterba No. 7 well. (R. 1082-1088) On September 5, 1947, the Commission entered its report and Order No. 20289 granting the petition and approving the Plan of Compulsory Unitization, as amended. (R. 1239)

Palmer's oil and gas leasehold, covering 160 acres of land, was derived through an oil and gas lease executed by Paul Sterba, and other then owners of the property, as lessors, on February 18, 1936, to Chris Pearson, as lessee, who in turn assigned said lease to Gulf Oil Corporation. (R. 1523-1529) A copy of this lease is printed in Appendix "D", pages 58 to 162. On September 6, 1938, Gulf Oil Corporation assigned its rights under said lease to Palmer to a depth of 6,000 feet, retaining an overriding royalty, and by contract required Palmer to commence the drilling of an oil and gas test well on said lease and drill the same to a depth of 6,000 feet, unless oil and gas, or either of them, were found in commercial quantities at a lesser depth. (R. 1477) A copy of the assignment of the lease from Gulf Oil Corporation to Palmer is printed in Appendix "E", pages 163 to 166, and a copy of the contract between Gulf Oil Corporation and Palmer is printed in Appendix "F", pages 167 to 174.

Palmer completed its first well on this leasehold in October, 1938, which produced oil from the "Niles Sand" at a total depth of 3545 feet; completed its second well in May, 1939, which produced oil from the "Rowe Sand", at a total depth of 3401 feet; completed its third well in October, 1940, as a gas well, being the

first well on said leasehold producing from the "Medrano Sand", at a total depth of 5260 feet; completed its fourth well in June, 1943, which produced oil from the "Medrano Sand" at a total depth of 5995 feet; completed its fifth well in August, 1943, to a total depth of 6,000 feet, as a dry hole, being drilled into a fault; completed its sixth well on November 7, 1943, to a total depth of 6,425 feet, as a dry hole, having been drilled into the same fault; and on May 21, 1947, completed its seventh well, which produced oil from "Medrano Sand" at a total depth of 5,992 feet. (R. 6)

The first oil and gas test well drilled in the area known as the West Cement Field was completed on October 17, 1917, as an oil well in a producing horizon other than the "Medrano Sand". The first test well which resulted in production from the "Medrano Sand" in the West Cement Field was completed as a producer of gas in October, 1936, on land located in the next governmental section to Palmer's leasehold, and the first well producing oil from the "Medrano Sand" in said West Cement Field was discovered in March, 1943, on a quarter section adjacent to Palmer's leasehold. (R. 235, 1422)

The Compulsory Unitization Act was enacted by the 1945 Legislature of the State of Oklahoma and became effective on the 26th day of July, 1945. The Written Plan of Unitization approved by Order No. 20289 embraced 72 separate tracts (shown on Exhibit 24, R. 176, 210) of land covered by separate oil and gas leases comprising a total of 3700 surface acres. Palmer's

Sterba oil and gas lease, covering 160 surface acres, is in the approximate center of the unitized area and was estimated to have oil in place in the Medrano sand bodies thereunder of 7,880,000 barrels. (Exhibit 53, R. 1484 A, Tract No. 30-31) At the time of the entry of the Commission's Order No. 20289, on September 5, 1947, each of Palmer's Sterba Medrano sand oil wells were being allowed to produce 200 barrels of oil per day by the Commission under the General Oil and Gas Conservation Laws of the State of Oklahoma and were capable of producing such oil without waste. (R. 244, 610)

The Medrano sand bodies underlying the West Cement Field dip sharply from the Northeast to the Southwest, ranging from an approximate depth below the surface of 4,500 feet to 6,000 feet, the thickness of the sand bodies pinching out at the top of the structure but thickening at the bottom of the structure to an estimated thickness of 125 feet. The gas zone or zones are in the upper portion of the sand bodies, the oil zones are immediately below the gas zones and water below the oil zones. (Ex. 25, R. 1476-1477, 211)

The original Plan of Unitization specified or assigned the percentage of interest or ownership in the entire Unit held by each leasehold owner or owners, and the royalty owner under each lease was assigned a fraction of such ownership based upon the royalty provisions in the lease, usually a 1/8th interest. (R. 179-181) The method by which such percentage ownership was determined is not shown in the Plan itself

but was adduced in evidence on cross examination of appellees' witnesses. While Palmer's rights in the Sterba lease were to a depth of 6,000 feet, subject to Gulf Oil Corporation's overriding royalty, and while Gulf Oil Corporation had never drilled a well on such lease and no Medrano sand had been encountered in such lease at a depth below 6,000 feet through Palmer's several exploratory wells therefor thereon, the appellees in dividing the percentages assigned in the original Plan of Unitization between Palmer and Gulf divided the total 7.683% attributable as a whole to the Sterba lease, as follows:

Palmer (above 6000 feet) 5.145% 5,260,000 barrels of oil in place
Gulf (below 6,000 feet) 2.538% 2,620,000 barrels of oil in place
(R. 1486, 1487, Table 2, Tract No. 30-31, as to percentage;
R. 1484 A, Table 1, Tract No. 30-31, as to barrels of oil in place.)

While Cause No. CD 1308 was still pending before the Corporation Commission, Palmer drilled and completed its seventh well above mentioned, which established facts showing that the above percentages originally assigned to Palmer and Gulf were incorrect, because the information secured from the drilling of such well showed that there were more oil zone acre feet in the Medrano sand bodies under the Palmer-Sterba lease above the depth of 6,000 feet than had originally been estimated by appellees, the proponents of the Plan. Appellees then amended their Plan of Unitization in ac-

cordance with their interpretation of the information disclosed by Palmer's-Sterba Well No. 7, recalculating and reassigning the unit percentage under the Plan of Unitization by appellees assigned to the Palmer-Sterba lease as between Palmer and Gulf as follows:

Palmer (above 6,000 feet)	5.51614%
Gulf (below 6,000 feet)	2.15688%

(R. 1084-1088, 1492, Table 2, Tract No. 30; R. 1493, Table 2, Tract No. 31.)

The amended Plan, as approved, does not contemplate any subsequent change in the percentage of interest in the Unit owned by the various parties, even though subsequent drilling develops facts which would warrant such change. The evidence showed that prior to the filing of the petition to establish the unitization, an operator's committee was formed of which Mr. H. W. Kaveler, Phillips Petroleum Company, was chairman. The operator's committee caused to be formed a sub-committee of geologists and a sub-committee of engineers, which were referred to as "geologists' committee" and the "engineers' committee." (R. 232)

The only written report by the geologists' committee was a report made in October, 1945, identified and admitted into evidence as Exhibit 68. (R. 1414-1449, 389) A general description of the Medrano sand and its reservoir condition was given in this report as follows:

> "*Medrano Zone*—The attempt to define the stratigraphic age of the Medrano is not a consideration of this committee. For practical purposes, the top of the Medrano Zone is considered as the top of

the main body of conglomerate and or sand from sample determination and electrical logs. The base of the Medrano is placed at the base of the sand as determined in the same manner. The zone is composed of sand, conglomerate and shale.

"*Medrano Sand*—The Medrano sand is that portion of the Medrano zone composed of sand and conglomerate sand. The productive sand is that portion having sufficient porosity and permeability to form a reservoir and proven to be productive.

"*Areal Extent*—The north and northeast boundaries have been defined under the Corporation Commission Order No. 17736 as of April 10, 1945. Extension of this boundary was made to the southeast and to the northwest as shown on the maps presented with this report. Points where the sand is absent by faulting or pinch-out are shown as zero points or connected by zero lines. The Pool is limited on the south and west by water."

"STRUCTURAL INFLUENCE ON RESERVOIR

"*Faults*—The presence of a number of faults in the West Cement Medrano Pool have been proven by geologic evidence. Only those of sufficient importance to influence production have been considered and these divide the pool into five segments as shown on the map:

"The Sherritt Fault was cut by Gulf No. 3 Sherritt, 33-6N-10W.

"The Sterba Fault was cut by Phillips No. 2 Oaks, 34-6N-10W.

"Palmer No. 5 and No. 6 Sterba and Magnolia No. 2 Cement Henley, in Section 35-6N-10W.

"The Hartshorne Fault was cut by Phillips No. 1 Hartshorne in 2-5N-10W and Magnolia No. 11 Medrano and No. 10 Lindsey in 36-6N-10W.

"The Edwards Fault was cut by Magnolia No. 6 Edwards, 1-5N-10W.

"Five of the wells cited above missed the Medrano sand because of faults shortly above the zone.

"*Barriers*—The Edwards fault is believed to form a complete barrier between the production east of the fault and that west of the fault. There is no definite geologic evidence to prove or disprove communication between the other segments but it is agreed that pressure measurements indicate the lack of free communication between segments *** ." (R. 1415)

Mr. C. P. Dimit, Vice President of Phillips Petroleum Company, on March 21, 1944, wrote a letter to Petroleum Administrator for War, requesting authority for 20-acre spacing in the Medrano sand of the West Cement Field, stating among other things, as follows:

" *** it should be noted that the interpretation of the general geological features have not been changed greatly except for the now proven existence of cross faults, of which there is evidence of at least four. These cross-faults are known to exist both from pressure and stratigraphic data. Such faults have various displacements and the one traversing the S/2 of Section 35-6N-10W, is known to have a displacement of some 500 to 700 feet. The two wells drilled in the fault zone missed the Medrano sand entirely. The strike and displacement of the other three faults is not so well established but the interpretation here presented readily accounts for the difference in reservoir pressures.

The portion of the pool covered by this application is divided into four fault-segments, each of which has varying characteristics and varying degrees of ex-

ploitation. To facilitate presentation of data, these fault-segments have been designated as segments A, B, C, and D, and the limits of each shown on Exhibit A." (Ex. 92, R. 1466, 1468, 1047-1052)

The geologists' committee also prepared maps contoured on the top of the Medrano sand and on the bottom of the Medrano sand (Exhibits 54, 55, R. 1495, 1497, 318, 325) showing the gas oil contact, the water oil contact and the location of the various faults and other data. The geologists' committee also prepared sand thickness maps (Exhibits 56, 57, R. 1499, 1501, 327, 328) showing the estimated thickness of the Medrano sand in the oil zone, the estimated thickness of the Medrano sand in the gas zone, the several faults and other data. These several maps and all contours upon them were based upon information and data secured from 86 control points. (See Exhibit 54, R. 1495) being oil and gas test well holes drilled in the general area of the proposed unit. The information was secured from these various wells by way of electrical logs, core data and general production information, including the records in the office of the Corporation Commission. The core data was available on 15 of the test wells and no complete core from the top through to the bottom of the Medrano sand was ever taken from any well. Exhibit 54 was probably referred to in the evidence more than any other Exhibit and for convenience is reproduced as Appendix "G", page 175.

The geologists' committee estimated the top of the Medrano sand and the bottom of the Medrano sand at each of the control points within the Medrano sand and from this information prepared the maps above referred to, particularly the sand thickness maps (Ex. 56 and 57, R. 1499, 1501) of the Medrano sand containing oil or gas. In determining the sand thickness of the Medrano sand containing oil or gas, the Committee did not exclude shale breaks or any portions of sand having zero permeability or a low permeability. The geologists' committee also on said maps allocated to various tracts a sand thickness of the Medrano sand containing oil or gas, even though no wells were drilled upon any portion of 34 of such tracts containing a total of 1020 surface acres. (See Ex. 54, R. 1495) In some instances, tracts were allocated oil and gas in the Medrano sand, even where the wells drilled were dry holes or nominal producers. (Ex. 77, R. 1463, 909, Ex. 78, R. 1465, 919)

The top and bottom of the Medrano sand, as well as the sand thickness of the oil and gas zones of the Medrano sand at points other than control points is determined on the maps by the practice of contouring upon which no two people definitely agree. There may be differences of from 5 to 25 feet in contouring, depending upon who does it. Whether or not the contouring was correcty done materially affects the sand thickness under each tract and the participating unit factor assigned thereto. (R. 327)

The sand thickness maps were then furnished to the engineering sub-committee for the purpose of estimat-

ing the recoverable oil and gas in place and finally making the computation by which the percentage of interest in the unit was assigned to each of the separate leasehold owners and tracts. (R. 798)

The entire study and report (Ex. 71, R. 1419-1459, 553) made by the engineering committee is predicated on the existence of four geological faults dividing the Medrano Sand into five separate segments and their calculation and determination were made separately as to each segment. This engineers' report (Ex. 71) and the geologists' report (Ex. 68) are the basis of all testimony of appellee's expert witnesses.

The engineers' committee used the volumetric method of determining the estimated recoverable oil and gas in place. The procedure by which this was done can only be understood by a thorough study of Exhibit 71, and the actual calculations shown on Exhibit 53. (R. 1484A, 552-812) The calculations shown on Exhibit 53 were superseded by the calculations shown on Exhibit 53-R (R. 1490) as a result of change of facts occasioned by Palmer's drilling and completion of the Palmer-Sterba No. 7, which also caused Exhibits 54R, 55R, 56-R and 57-R to respectively supersede Exhibits 54, 55, 56 and 57. (R. 1495, 1497, 1499, 1501, 898, 901)

The engineers' committee undertook to estimate in each separate segment the amount of gas originally in place before gas was discovered and the amount of oil originally in place before oil was discovered. (R. 1425, 1450)

The sand thickness maps were used and, by surveying them with an instrument known as a planimeter, the engineers' committee estimated the acre feet of sand containing either oil or gas under each particular tract within each segment. (R. 622)

Each tract was assigned a porosity in the same amount as all other tracts within the same segment—irrespective of the actual porosity—such porosity being determined by a weighted average from the information available on the control points within that particular segment. When the factor of pressure or any other factors were used in making the estimated recoverable oil in place the same amount of factor was used for each particular tract as was used for other tracts within the same segment. (R. 1424, 505)

The isobaric map prepared by the engineers' committee, being Exhibit 72, (R. 1506, 903) showed that different pressures existed in the different segments as of November, 1945, when the pressure survey was made.

From the estimated acre feet of sand under each particular tract the original oil or gas in place under that tract was estimated. An arbitrary factor of 4% was then allowed to those tracts having their position on the lower portion of the structure allowing them a favorable gravity situation. This 4% was apportioned between such tracts on a percentage basis depending as to their location upon structure. For instance, a tract having the full benefit of gravity drainage was given 100% of the 4%, one having 50% benefit was given 50% of the 4% and so on. (R. 1484A)

The next step was to deduct from each tract the oil produced to March 1, 1946, in order to establish a definite date as of when the estimate would apply. Then the estimated recoverable oil as of March 1, 1946, was made based upon a recovery factor of 35½%. The estimated recoverable gas in place was computed by using a factor of 95%. (R. 295-299)

The recoverable gas as thus determined was assigned a value of 5¢ per thousand cubic feet and the estimated recoverable oil was assigned a value of $1.52 per barrel; the value of the recoverable oil and gas was reduced to money and therefrom a percentage calculated for each tract as to the entire unit. (R. 1484A, 303)

This percent was not the final percent of interest. The final percent of interest was determined by introducing another factor called "current income factor" based upon the oil runs from each tract during the months of May, June and July of 1946. These runs did not represent the actual potential or productivity of the wells on the tracts but rather the actual runs as allowed by the Corporation Commission. Based upon the runs mentioned each tract's current income percentage to the whole unit was computed. (R. 304, 571, 709-717)

The final calculation was to assign each tract the percent of ownership in the unit by giving the percent of the estimated recoverable oil a weight of 80% and the percent of the current income a weight of 20% and therefrom make the final computation. The 20% weight given to current income was an arbitrary figure. Witnesses for proponents stated that it was good engineering prac-

tice to use a current income factor but admitted that such factor could carry a weight as low as 15% and as much as 45% and still be within the realm of good engineering practice. (R. 884, 885, 1485, 301)

In the determination of the division of interests between the various tracts within the proposed unit no consideration was given to the comparative lifting costs involved in each of the respective tracts, nor the comparative efficiency of the respective operators, nor the comparative position of the respective operators concerning compliance with the implied covenants of their leases to properly develop the leases or drill offsets, nor comparative risks taken and expenses incurred in drilling and development.

Palmer drilled three wells which encountered the Medrano sand at a point above 6,000 feet and said wells are now producing from such sand. Palmer drilled two other wells at a depth which would have been great enough to encounter the Medrano sand, but, because of the Sterba fault, said wells found the Medrano sand absent. (Ex. 54, R. 1495)

Gulf Oil Corporation has drilled no well on the Sterba lease.

The engineers' committee in making a division of interest between Gulf Oil Corporation and Palmer merely ran a horizontal line through their estimated Medrano sand under the Palmer Sterba lease at a depth of 6,000 feet below the surface and credited Gulf with all sand lying below such horizontal line and Palmer with all sand lying above such horizontal line. (R. 596, 916)

In determining the interest as between Gulf Oil Corporation and Palmer, the engineers' committee gave no consideration to the additional risks taken by Palmer in drilling seven wells on the Sterba lease, two of which were dry, nor of its ownership or drainage rights in that portion of the Medrano sand lying below 6,000 feet, the top of which is encountered above 6,000 feet.

The interests of certain tracts of the proposed unit were arbitrarily reduced by 50% of sand thickness because of a poor quality of sand. Certain other tracts because of having current income but a low estimated recoverable oil were given an accelerated payment over a period of the first five years under the proposed unit operation, which was to be made up in the succeeding five years. (R. 1288)

While the unit plan does not so provide, proponents' witness testified and the engineers' report stated (Ex. 72, R. 1425-1426) that the intention was to close in wells producing from the gas zone of the Medrano sand, to construct a compressor plant at some location within the unit area and inject gas into the oil zone. Witnesses for appellees proposing the plan also testified that seven additional oil wells would be drilled within the oil zone but no locations for any of these wells were estabished. The estimated cost of putting the unit into operation under a gas re-cycling procedure was two million dollars. (R. 575, 610)

The evidence conclusively showed that at the time the Order was entered two-thirds of the gas energy in the Medrano sand had been exhausted, that the produc-

tion of oil and gas in the West Cement Field had been and still is under the jurisdiction of the Commission pursuant to the General Oil and Gas Conservation Statutes of the State of Oklahoma, and that Palmer had, at all times, drilled, developed and operated its said Palmer-Sterba leasehold in accordance with the best known practices and procedures and without waste and in accordance with such Conservation Statutes, and that as an operator Palmer was unexcelled. (R. 1335, 729)

The Sterbas, the landowners and owning an undivided 1/8th royalty right under the Palmer-Sterba lease, were not, under the provisions of the Compulsory Unitization Act or the Plan of Unitization, given any voting voice and did not appear in said cause before the Commission or participate therein. After Order No. 20289 of the Commission was entered September 5, 1947, Palmer filed its motion to set aside Findings of Fact made by the Commission, which was denied, and within due time Palmer perfected its appeal to the Supreme Court of Oklahoma, which was docketed there as Cause No. 33336, as aforesaid. Palmer having failed to put up the supersedeas bond as required by the Commission, the Unit operator took over the operation of Palmer's leasehold and other tracts within the Unit on December 1, 1947, and has at all times since said date been operating the same. (R. 11, 17)

In Cause No. 33708, Paul Sterba and Paul Sterba, Jr., a minor, by and through his father and next friend, Paul Sterba, and The Palmer Oil Corporation, as petitioners, filed an application direct in the Supreme Court of Okla-

homa against the Corporation Commission of Oklahoma and the Unit Operating Committee, consisting of Phillips Petroleum Company, a corporation (the Unit Operator), Amerada Petroleum Corporation, a corporation; Anderson-Prichard Oil Corporation, a corporation; Cities Service Oil Company, a corporation; Foster Petroleum Corporation, a corporation; Gulf Oil Corporation, a corporation; Magnolia Petroleum Company, a corporation; Ray Stephens, Inc., a corporation; Stephens Petroleum Company, a corporation; Sunray Oil Corporation, a corporation, as defendants, to assume original jurisdiction on petitioner's petition for a Writ of Prohibition to prohibit and restrain the defendants from enforcing the Commission's Order No. 20289, (R. 1 to 14) which application to assume original jurisdiction was sustained, docketed as Cause No. 33708 and consolidated by Order of the Supreme Court dated September 28, 1948, with Cause No. 33336. (R. 16)

The petitioners alleged in their petition that the Order No. 20289 of said Commission was invalid and in violation of the various provisions of the Constitution of the United States, heretofore referred to, and that the defendants, in their enforcement of said Order and in the operation of said Unit were, therefore, exercising unlawful judicial and legislative authority and should be prohibited and restrained in further enforcing said Order No. 20289, and from the further operation of said Unit. (R. 8 to 13)

In due time the various defendants took issue on said petition and the consolidated cause was duly presented

to the Supreme Court of Oklahoma by oral argument on April 19, 1949. Thereafter, and on March 20, 1951, the Court held that the Compulsory Unitization Statute, House Bill 339 of the 1945 Oklahoma Legislature, was valid, affirmed Order No. 20289 of the Corporation Commission in Cause No. 33336, and denied the Writ of Prohibition in Cause No. 33708. Thereafter, and in due time appellants perfected their appeal to the Supreme Court of the United States. (R. 131-153)

The Supreme Court, being advised of the repeal of House Bill 339, by Enrolled Senate Bill No. 203 enacted May 26, 1951, by both Houses of the Oklahoma Legislature, sent the case back with the requirement that the appellants, with all convenient speed, have a determination made as to the effect of such repeal on their rights. Thereupon a motion was filed in the Supreme Court of Oklahoma to withdraw its Mandate setting up the repeal of said Statutes, whereupon, the Supreme Court of Oklahoma rendered a supplemental decision, finding that the rights of appellants, once established, by said Order and Statutes, were not affected by the subsequent repeal of such Statutes. Thereafter additional record was made in this Court with such showing and the Court noted probable jurisdiction on the 14th day of January, 1952. (R. 1536-1539)

SUMMARY OF ARGUMENT.

The over-all contention of Appellants is that the provisions of House Bill No. 339 of the 1945 Oklahoma Legislature (App. "A", pps. 77 to 91) and the written Plan of Compulsory Unitization approved by Order No. 20289 of the Corporation Commission of the State of Oklahoma (App. "C", pps. 105 to 157) do not reasonably promote conservation of oil or gas and protect correlative rights within the limitations required by the due process, equal protection and contract clauses of the Constitution of the United States, and, therefore, such Statute and Plan are an improper and unreasonable exercise of the police power of the State of Oklahoma.

In this Summary, the contentions made under the specifications of error in the "Argument" portion of this brief, hereinafter set forth, may be reduced to separate sub-arguments, as follows:

(A) Neither the Statute nor the Plan of Unitization, in reality, provides for or is the action of the State of Oklahoma, but rather constitutes an unlawful delegation of authority to private persons owning designated percentages of lessees' interests in the Unit area. *Carter v. Carter Coal Co.*, 298 U. S. 238, 56 S. Ct. 855, 80 L. Ed. 1160.

While in Oklahoma its Corporation Commission is a constitutional body (Oklahoma Constitution, Article IX, Sec. 15) and under the Oklahoma General Oil and Gas Conservation Laws (Statement as to Jurisdiction, Appendix "I", pp. 226-301) it for many years has been heretofore and is now authorized to and charged with

the duty of conserving oil and gas in that State, under this Statute complained of the Corporation Commission of Oklahoma cannot itself initiate, promulgate or issue a Plan of Compulsory Unitization for any oil or gas bearing sand in any common source of supply. Under this Statute only a percent (50 percent, see Par. 286.4, Appendix "A", page 78) of private parties may determine the policy of whether a particular oil field should be unitized; having so determined, the same percentage of private parties formulate the Plan of Unitization and decide whether the Corporation Commission shall be given jurisdiction to approve or reject their Plan of Unitization; if the Commission approves the Plan of Unitization, a percentage (15 percent to nullify, Par. 286.6, Appendix "A", page 82; 10 percent to amend, Par. 286.11, Appendix "A", page 88; 50 percent to enlarge, subject to veto of 15 percent, Par. 286.12, Appendix "A", page 88) of private parties may still nullify, amend or enlarge the Plan of Unitization. If the Plan is approved, and not nullified or amended, a percentage (66⅔ per cent and 75 percent, VIII of Plan, Appendix "C", p. 116) of private parties determine by whom and in what manner the Unit shall be operated and how and when it shall be wound up and closed, with the Commission having no power to control the action of such private parties.

The Statute specifically prohibits the Commission from naming the operators of the Unit (Par. 286.5, Appendix "A", page 79) or from expressing its views on appeal in the State Supreme Court (Par. 286.7, Appendix "A", page 83).

Cases like *Wurts v. Hoagland*, 114 U. S. 606, 5 S. Ct. 1086, 29 L. Ed. 229, supporting the drainage districts principle, or *Head v. Amoskeag Manufacturing Co.*, 113 U. S. 9, 5 S. Ct. 441, 28 L. Ed. 889, supporting the mill dam acts, are not authority for the Statute and Compulsory Plan of Unitization as presented in this case. Those cases establish that where the benefits of a recognized local public improvement accrues directly to property owners within the area involved such property owners may be assessed with the expense of such improvement on condition that the majority of them want the improvement; and a fair compensation is provided when property is actually taken. Those cases are not authority for the taking of property and destruction of contract rights for the purpose of conservation, which is of general public interest where no percent or group of private parties should ever control, especially where the facts are disputed.

The Statute on its face and the Plan of Unitization approved thereunder, disclose their purpose as not being one in the pubile interest for the conservation of oil and gas and the protection of correlative rights, but to place the business of producing oil and gas in the hands and under the control of the major integrated companies as distinguished from minor independent operators, also eliminating supervision by land or royalty owners.

(B) The Statute and Plan of Unitization do not provide for equal protection of the law as between the lessors and the lessees and as between persons or parties whose rights were definitely fixed at the time the Statute was enacted. Garvin, "*The Effect of Field Unit Operation*

upon the Royalty Interest and the Royalty", 21 Okla. St. B. J. 1793, 1798, 1799 (1950).

The inequality existing between the owners of major lessee interests as distinguished from the owners of minor lessee interests resulting from the percentage provisions of the Statute and Plan has previously been mentioned. Even more unfair and unreasonable is the failure of either the Statute or Plan to provide the lessors or royalty owners the same or similar rights granted to the lessees. A lessor or royalty owner has no right to initiate or formulate a Plan of Unitization or to petition the Commission for approval thereof. The only notice of a petition to establish a Plan of Unitization provided to a royalty owner is a publication notice and even should such royalty owner or lessor appear he is not given, under the Statute or the Plan, a voting right to nullify, amend or otherwise change the Plan, or in any way to control its operation.

Appellees will no doubt contend that the interests of the lessor and lessee are the same and that the royalty owner or lessor will be amply protected by the action taken by his particular lessee. It may be true that the interests of a lessor and lessee are in some respects the same but in many instances their interests are adverse. The development of the law of implied covenants is based upon the disparity of interest as between the lessor and lessee, providing the former a remedy against the latter, where there are no express provisions present.

The discrimination between the lessor and lessee is unfair and unnecessary, will not promote but will deter

conservation of oil and gas and will prevent protection of correlative rights. The Statute and Plan for this reason are unconstitutional in failing to provide equal protection of the law. Maurice H. Merrill, a Book Review on "*A Form for An Oil and Gas Conservation Statute*", 4 Okl. Ba Rev. 272, 274, (May, 1951).

Also, the Statute excludes from its operations all oil fields twenty years of age on the effective date of the Statute and all fields that, on such effective date, are being operated under pressure maintenance or secondary recovery methods. (Par. 286.2, Appendix "A", page 77) This discrimination has no justification in fact or in law, for a field twenty years of age or one being operated under pressure maintenance may be in much more need of unitization than a new field operated on the most competitive basis. Such unequal protection of the law has been criticized (21 Okl. St. B. J. 1801, 1802 (1950)) and is sufficient to render the Statute unconstitutional.

(C) The Statute and Plan of Unitization are not mere Regulations of a business or industry but provide Laws to be made and administered at the uncontrolled discretion of private parties which unreasonably and unnecessarily destroy vested business property and contract rights of others. Palmer acquired its leasehold in 1938 under the terms of which it had the right to engage in its business of producing oil or gas and to receive a stated share of the production from said leasehold in accordance with the then existing law. The Sterbas, Palmer's lessors, have the right to enforce the express and implied covenants of the lease, including the right

to require Palmer to drill, develop and operate such leasehold in accordance with the then settled law. (*Gruger v. Phillips Petroleum Co.*, 192 Okl. 259, 262, 135 P. (2d) 485, 488 (1943); *Gibbens, "The Effect of Conservation Legislation on Implied Covenants in Oil and Gas Leases,"* 4 Okl. L. Rev. 337, 339 (1951). The Sterbas were also entitled to 1/8th of the oil and gas produced from the leasehold, which experience in the oil industry had shown was the equivalent of 7/8ths usually received by the owner of the lease for the risk and expense required of him. (*Glassmire, Oil and Gas Leases and Royalties*, Sec. Ed. Par. 16, P. 60)

Palmer had drilled six wells, two of which were dry holes, before the Statute was enacted in 1945 and completed the seventh well before the Plan of Unitization was approved. Palmer was unexcelled as an operator, complied with the covenants, express and implied, of its lease and had operated the leasehold without waste in accordance with all Rules and Regulations of the existing General Conservation Laws of Oklahoma. Without compensation for its loss on dry holes, the risk taken, its ability as an operator or its compliance with the covenants of the leasehold, Palmer, by this Statute and Plan of Unitization, has been excluded from the operation of its own premises. Its leasehold has been forced into a unit with leaseholds owned by others, its competitors, some of whom have not drilled any wells, nor complied with the terms of their leases. It is being operated with such other leases as a unit by a unit operator, chosen also by Palmer's competitors. Palmer, in

lieu of its property and rights, is assigned the passive right to receive a share of the production from the unitized area, which share was fixed in the Plan by others, Palmer's competitors, in the whole field over which Palmer has no percentage control. The Sterbas are unable to enforce the express or implied covenants of the leasehold and have, therefore, lost the right to share in 1/8th of the production from such leasehold, based upon Palmer's operation or control thereof. They are, in lieu thereof, given the right to share in the production of the whole unit over which they have no control.

The complete disregard and destruction of Palmer's and the Sterbas' property and contract rights by a retroactive law which could not have been foreseen is unfair and not reasonably necessary for the conservation of oil and gas and the protection of correlative rights. See, *Antitrust Laws et al. v. Unit Operation of Oil and Gas Pools*, P. 161, 162 (1948).

(b) The undisputed evidence discloses that the Medrano sand of the West Cement Field is traversed by several impervious geological faults of such magnitude as completely to separate said Medrano sand into several separate bodies or separate common sources of supply of oil and gas, thereby making the Statute and the Plan improper and inapplicable as a reasonable exercise of the police power of the State of Oklahoma, since correlative rights are not involved. All of the known facts concerning the Medrano sand were derived through Appellees themselves on cross examination. The entire study of the Medrano sand by the engineers' committee and

the geologists' committee is predicated on the existence of four faults dividing the sand into five separate segments. Although Appellees' witnesses expressed the vague opinion that some of the faults were not complete barriers at least in the gas zone of the Medrano sand, no witness was bold enough to deny that all known facts clearly indicated that the Sterba fault constituted a complete barrier, and Appellants' expert witnesses so testified. All authority supporting conservation statutes are in agreement that there must be a protection of correlative rights which, of course, cannot exist where several separate and distinct sources of supply are treated as one common source of supply. In other words, there is no common property. (*Ohio Oil Company v. Indiana*, 177 U. S. 190, 20 S. Ct. 576, 44 L. Ed. 729.

(E) The Order and Plan, particularly the division of interest therein, are unreasonable, arbitrary and capricious when considered in the light of the undisputed evidence.

(1) At the time the Order was entered on September 5, 1947, two-thirds of the gas reservoir energy had been exhausted. The purpose of the unitization so far as the evidence disclosed was to conserve the gas energy by repressuring through the means of a cycling plant to reinject into the Medrano sand all gas produced. With two-thirds of the gas energy exhausted it is obviously unreasonable to require a unitization entailing the destruction of property and contract rights merely to conserve the remaining one-third gas energy. Moreover, the same result is substantially obtainable under the General Conservation

Laws without such a drastic effect upon individual property and contract rights. See *Denver Producing and Refining Company v. State, et al.*, 199 Okl. 171, 184 P. (2d) 961.

(2) The Plan included within the unit considerable acreage, which was not proven to contain productive oil or gas.

(3) The method used in assigning the divisions of interest fails to include certain specific requirements of the Statute and important factors under existing legal rights.

(a) The division of interest as between Gulf Oil Corporation and Palmer was unreasonable in dividing the oil merely on the basis of a horizontal plane extended 6000 feet below the surface.

(b) The division of interest method was unreasonable in failing to include factors such as the risk and expense in drilling and development and the comparative compliance of lessees with the implied covenants under their respective leases.

(c) The division of interest method gave no consideration to the comparative efficiency of operators or the "burden of operation", although the latter factor was specifically required by the Statute.

(d) The division of interest method did not fairly include a factor of "probable productivity *** in the absence of unit operation", as required by the Statute, but assumed an arbitrary 20 percent "current income" factor based upon the production allowables in three months rather than the productive capacity of the wells.

ARGUMENT.

As previously stated, the fundamental question is whether House Bill No. 339 and the Plan of Unitization approved thereunder constitutes a reasonable exercise of the police power under the facts of this case, within the limitations required by the due process, equal protection and contract clauses of the Constitution of the United States. For purpose of clarity, the errors assigned (this Brief, pages 4 to 8) will be separately or jointly presented and argued under the contentions hereinafter set forth, prefaced by a brief history of the conservation of oil and gas under the police power, with particular emphasis on the problem of field-wide unitization, which is here involved.

I.

SAID STATUTES, ORDER AND PLAN ARE AN UNREASONABLE EXERCISE OF THE POLICE POWER. THIS GENERAL CONTENTION IS COVERED BY ASSIGNMENT OF ERROR (a). (Brief page 5)

It is conceded, as a general principle, that Regulatory Legislation designed to conserve natural resources and protect correlative rights is sustained under the police power. See *Summers Law of Oil and Gas*, Vol. 1, Sec. 106, for a good general discussion with many authorities cited. *Legal History of Conservation of Oil and Gas, A Symposium, American Bar Association, 1938;* see Annotations, *24 ALR 307, 78 ALR 34, 86 ALR 418, 86 ALR 431, 13 ALR (2d) 1095; Republic Natural Gas Company v. Oklahoma*, 334 U. S. 62, 68 S. Ct. 972, 92 L. Ed. 1212,

dissenting opinion of Mr. Justice Rutledge, at 334 U. S. 74, 92 L. Ed. 1222.

It may also be conceded that early unitization of an entire common source of supply of oil and gas and unit operation thereof, may result, over a period of time, in the greatest recovery of oil and gas therefrom, and, depending upon many other facts and circumstances, may be the most efficient and modern method known under present scientific information. *Summers Law of Oil and Gas.* Vol. 1, Sec. 104.

To make the above concessions, however, does not mean that some proposed form of unitization is better for a particular oil and gas field than to drill and develop such field under standard practices; or, that a compulsory unitization will ever be wise policy for a State to follow, except, possibly, where the facts are undisputed and no reasonable objection exists. See *Glassmire, Oil and Gas Leases and Royalties,* 2nd edition, Section 11, page 41. For instance, the compulsory unitization by the Commission under House Bill 339, of the Chitwood Spiers Sand was a miserable failure. See 21 Okl. B. J. 1796 (1950).

It is not strange that field-wide unitization was, from the beginning, promoted by representatives of or those working closely in association with the major oil company interests. The late Henry L. Doherty, being fearful of an early depletion of our oil and gas reserves, and, realizing their necessity for defense purposes, in 1924 strenuously recommended unit operations of oil and gas fields and that the same be placed under Federal control.

He was considered radical chiefly because of his recommendation of Federal control. However, his ideas of Federal control did not necessarily mean compulsory unitization.

Subsequently, the matter of fieldwide unitization was studied by such organizations as the American Petroleum Institute, American Institute of Mining and Metallurgical Engineers, the American Bar Associaton, and others. Even the Federal Government gave consideration to unit operations on Government owned land, and by Statute enacted as early as 1930, the Secretary of the Interior was authorized to approve a proposed Plan of Unitization where it was in the public interest. James A. Veasey of The Carter Oil Company, who spear-headed the study made by the American Bar Association, heartily agreed with the idea of unitization but concluded that a Statute authorizing compulsory unitization based upon the will of the majority of the operators in an area would be unconstitutional as an unreasonable delegation of authority. See *Veasey, Legislative Control of the Business of Producing Oil and Gas; Reports of the American Bar Association*, Vol. 52, page 577, 628 (1927). In 1931, W. P. Z. German, then General Attorney for Skelly Oil Company, asserted the view that the State had authority to require unit operation of oil pools. See *Compulsory Unit Operation of Oil Pools*, 17 ABAJ 393 (June, 1931). However, Mr. German was not thinking of field-wide unitization so much as he was about unitization of small areas for well spacing purposes. From 1931 to 1940 very little was said or done about unitization, except,

some academic discussions before the Section on Mineral Law of the American Bar Association, (see M. L. Hader, Carter Oil Company "*The Principles of Petroleum Engineering, Which, If Properly Understood and Applied Should Uphold the Constitutionality of Any Reasonable State Pooling Statute Designed to Conserve, Maintain, and Require the Efficient Use of the Reservoir Energy of an Oil Pool to Enlarge the Ultimate Recovery*"; Northcutt Ely "*Legal Restraints on Drilling and Production*", *Pamphlet American Bar Association, Section of Mineral Law, Annual Meeting Kansas City, 1937*, pages 25 and 45), or in Law Review Articles. See "*The Conservation of Oil,*" 51 Har. Law Rev. 1209, (1938); Ford, "*Controlling Oil Production,*" 30 Mich. L. Rev. 1170 (1932).

The fear expressed twenty-five years ago when oil and gas reserves were approximately 9,000,000,000 barrels with an annual consumption of 750,000,000 barrels of an early depletion of our natural resources of oil and gas are hardly justified in the light of subsequent developments. (*Hardwicke Antitrust Laws, et al. v. Unit Operation of Oil or Gas Pools*, Appendix 180 (1948)). Proven oil reserves in the United States as of January 1, 1952, stood at 32,000,000,000 barrels with an annual consumption of somewhat in excess of 2,000,000,000 barrels. See *The Oil and Gas Journal*, Vol. 50, No. 38, page 218, January 28, 1952.

In 1940, the Oklahoma City Wilcox Secondary Recovery Association, which was organized through the efforts of

Phillips Petroleum Company, employed counsel to draft legislation providing for compulsory field-wide unitization in Oklahoma. There was a diversity of opinion among those in the Association whether such legislation was desirable even for secondary recovery operations. A compromise draft of a Bill was finally introduced in the 1941 Oklahoma Legislature but it failed to pass. Later a Committee was formed by the Mid-Continent Oil and Gas Association to work on such legislation, and, although submitted in 1943 as House Bill 332, this Bill also failed. Then House Bill 339 was prepared and submitted to the 1945 Oklahoma Legislature, passing under the banner of fostering secondary recovery. See "*Conservation of Oil and Gas, a Legal History*", 394-403 (1948). House Bill 339 was completely repealed by Enrolled Senate Bill No. 203 enacted by the 1951 Oklahoma Legislature. This latter Bill eliminated all, except possibly one, of the constitutional objections raised by Appellants on this appeal.

This case was filed before the Corporation Commission on the 22nd day of October, 1946, and during the trial thereof, and since Order No. 20289 was entered on September 5, 1947, the major oil companies began to realize that they could not, on this matter of unitization, run roughshod over all independent producers and all royalty owners. As a consequence an extensive campaign of education on the question of unitization has been conducted. In fact, there has been more literature in the past five years on the problem of unitization than in all preceding time.

See *Myers, "Spacing, Pooling and Field-wide Unitization"*, 18 Miss. L. J. 267 (1947); *Hardwicke, "Antitrust Laws, et al. v. Unit Operations of Oil or Gas Pools* (1948); *King, "Pooling and Unitization of Oil and Gas Lease,"* 46 Mich. L. Rev. 311, (1948); *Jacobs, "Unit Operation of Oil and Gas Fields"*, 57 Yale L. J. 1205 (1948); *Conservation of Oil and Gas, a Legal History* (1948); *Merrill, "Implied Covenants, Conservation and Unitization"*, 2 Okl. L. Rev. 469 (1949); *Unit Operation at Cotton Valley: An Alleged Violation of the Sherman Act*, 24 Tulane L. Rev. 76, (1949); *"Petroleum Conservation", by American Institute of Mining and Metallurgical Engineers*, (1950); *Proceeding of First Annual Institute on Oil and Gas Law, South Western Legal Foundation, Dallas, Texas*, pages 1-96, 519, 545 (1950); *Green, "Proposed Amendments to the Unitization Law*, 21 Okl. B. J. 1793 and 1801 (Dec. 1950); *Gibbens "The Effect of Conservation Legislation on Implied Covenants in Oil and Gas Leases"*, 4 Okl. L. Rev. 337, 362, (1951); *Merrill "Implied Covenants and Secondary Recovery"*, 4 Okl. L. Rev. 177, 189 (May, 1951); *Techniques of Field Wide Unitization"*, Voorhees, 24 Rocky Mountain L. Rev. 14 (1951); *Hardwicke, "Unitization Statutes: Voluntary Action or Compulsion"*, 24 Rocky Mountain Law Rev. 29 (1951); *"Oil and Gas Production", Engineering Committee, Interstate Oil Compact Commission* (1951); *"A Form for an Oil and Gas Conservation Statute" by T. Murry Robinson, et al., Legal Committee of Interstate Oil Compact Commission* (1951).

The Proceeding of Third Annual Institute on Oil and Gas Law, South Western Legal Foundation, Dallas, Texas, (1952), was devoted entirely to the matter of unitization but the proceedings have not yet been printed.

General Regulations on any type of satisfactory unitization of an oil field require a long time and considerable experience to formulate. Even the Secretary of the Interior required more than fifteen years to work out Regulations covering unit operation of oil and gas deposits owned by the United States of America. See 12 Fed. Reg. 528:2, January 25, 1947.

House Bill No. 339 of the 1945 Oklahoma Legislature (O. S. Supp. 1949, Title 52, Sec. 286.1 to Sec. 286.17, inclusive), is the first Statute of its kind and undertakes to provide for an enforced unitization and unit operation of an entire oil and gas field. There have been City Ordinances and Statutes which have provided for the pooling of small tracts for the establishment of drilling units for the production of oil and gas which have been sustained under the police power, (see *Marrs v. City of Oxford*, CCA 8th, 1929, 32 F. (2d) 134, Cir. Denied, 280 U. S. 573, 50 S. Ct. 29, 1929; *Gant v. Oklahoma City*, 159 Okl. 86, 6 P. (2d) 1065, (1931), affirmed 289 U. S. 98, 53 S. Ct. 530, 77 L. Ed. 1059; *Patterson v. Stanolind*, 182 Okl. 155, 72 P. (2d) 83, (1938), appeal dismissed 305 U. S. 76, 59 S. Ct. 25 (1939), but it is recognized that there is a major distinction between the pooling of small tracts for a drilling unit under spacing Statutes or Regulations, and the matter of an enforced unitization of an entire oil and gas field covering a great area. A. Allen

King, *"Pooling and Unitization"*, 46 Mich. L. Rev. 311, 312, (1948).

The general question of whether House Bill No. 339 and its application by the Commission in issuing Order No. 20289 approving the Plan of Unitization, constitutes a reasonable exercise of the police power of the State of Oklahoma, is a question which involves not one but many factors and considerations. The general question is whether the means chosen (in this case the Statute, the Order of the Commission and Written Plan of Unitization) have a reasonable relationship to the ends sought (conservation and protection of correlative rights) and are not more drastic than are reasonably necessary under the facts. *Thompson v. Consolidated Gas Utilities Corp.*, 300 U. S. 55, 81 L. Ed. 510, 57 S. Ct. 190.

Generally speaking, the perplexities arising under administrative orders issued pursuant to valid conservation legislation are outlined in the opinion of *Railroad v. Rowan and Nichols Oil Company*, 310 U. S. 573, 84 L. Ed. 1368, 60 S. Ct. 1021, rehearing denied 311 U. S. 727, 85 L. Ed. 473. When the facts upon which findings are made by the administrative body in support of its Order are not before the Court, the Court must accept or assume such findings to be true. *Patterson v. Stanolind Oil and Gas Company*, 305 U. S. 376, 83 L. Ed. 231, 59 S. Ct. 25; or where the findings and Order of the administrative body are based upon conflicting facts, the Court should, as it did in the *Rowan* case, accept the findings of the administrative tribunal as conclusive. *When, however, as in this appeal, the Statute itself is*

challenged as being unconstitutional, as well as the administrative Order approving the unitization thereunder, with a claim that certain basic facts upon which the Commission based the Order were unsupported by the evidence, the Court has the right to search the record to determine whether there is any support in the evidence for the findings which give rise to the constitutional questions. See *Baltimore & Ohio Railroad Company v. United States,* 80 L. Ed. 1209, 298 U. S. 349, 56 S. Ct. 797; *Ohio Valley Water Co. v. Ben Avon,* 253 U. S. 287, 64 L. Ed. 908, 4 S. Ct. 527; *St. Joseph Stock Yards Co. v. United States,* 298 U. S. 38, 80 L. Ed. 1033, 56 S. Ct. 720; *Niemotko v. Maryland,* 95 L. Ed. 267, 340 U. S. 268, 71 S. Ct. 325.

The various considerations and the specific facts which show that House Bill No. 339 and the Plan of Unitization approved thereunder are an unreasonable exercise of the police power of the State of Oklahoma are presented and argued under the pertinent Specifications of Error in sub-divisions hereinafter set forth 2 to 6 inclusive.

II.

SAID STATUTES, ORDER AND PLAN OF UNITIZATION CONSTITUTES AN UNREASONABLE AND UNLIMITED DELEGATION OF LEGISLATIVE AND JUDICIAL POWER TO PRIVATE PARTIES OWNING DESIGNATED PERCENTAGES OF INTERESTS, DISCRIMINATING IN FAVOR OF MAJOR INTEREST OWNERS AS AGAINST MINOR INTEREST OWNERS. THIS CONTENTION IS COVERED BY ASSIGNMENT OF ERRORS (j), (k), (l), (m) AND (n). (Brief, Pages 6, 7)

The pertinent portions of House Bill No. 339 provide as follows:

Sec. 286.3. "Subject to the limitations of this Act the Corporation Commission *** is hereby vested with jurisdiction, power and authority, and it shall be its duty, to supervise the administration of this Act."

Sec. 286.4, sub-division (d). " *** To give the Commission jurisdiction hereunder, the petition shall be filed by, or with the authority of, lessees of record of fifty percent (50%) or more of the area *** sought to be unitized. The petition shall set forth *** the proposed unit area with a map *** attached, must allege *** facts required to be found by the Commission *** and shall have attached *** a recommended plan of unitization applicable to such proposed unit area and which the petitioners consider to be fair, reasonable and equitable."

Sec. 286.5, sub-division (a). " *** The designation of the operator shall be by vote of the lessees in the unit in a manner provided in the plan of unitization and not by the Commission."

Sec. 286.6. "If at any time after the filing of a petition for the creation of a unit and within sixty (60) days after the entry of an order by the Commission approving the creation of the same, lessees

of record of fifteen percent (15%) or more of the proposed unit area, if prior to the entry of the order by the Commission, or lessees of record of fifteen percent (15%) or more of the unit area as defined by the approved plan of unitization and order of the Commission, if after the entry of such order, shall file written protest with the Commission against the creation of the unit, the Commission shall vacate all action of any kind theretofore taken and dismiss the proceedings for the creation of such unit. The fact that a lessee joined in the petition seeking authority to create the unit or otherwise participated in any of the steps thereafter taken with the view of creating the same, shall not preclude such lessee from filing a protest pursuant to the provisions of this Section.

Sec. 286.7. " *** Any person aggrieved by any order of the Commission made pursuant to this Act may appeal therefrom to the Supreme Court of the State of Oklahoma *** except in any such appeal the Commission shall be impartial, inactive and shall not be represented directly or indirectly *** ."

Sec. 286.11. "In any proceeding hereunder in which an order is entered creating a unit, the Commission shall retain jurisdiction *** for the purpose of amending the plan of unitization *** Such an amendment may be made only upon the petition of lessees of record of ten percent (10%) or more of the unit area. Any amendment to a plan of unitization made pursuant hereto shall be effective prospectively only from and after the date on which the order *** shall become final."

Sec. 286.12. "The unit area of a unit may be unitized with adjoining and contiguous portions of the same common source of supply *** upon the filing of a petition therefor and after notice and hearing, in the same manner, on the same conditions, but sub-

ject to the right of lessees of record of fifteen percent (15%) or more of an existing unit area to protest, and veto such enlargement *** all as herein provided with respect to the creation of a unit in the first instance."

(Appendix "A", pages 78 to 88)

The pertinent portions of the Plan of Unitization are quoted or summarized as follows:

Section VIII provides for an Operating Committee with various powers, including the power to remove the Unit Operator and select a successor, to determine the extent of drilling operations and development to be carried on by the Unit Operator, including drilling, plugging back, reconditioning, deepening, abandonment, etc., pass upon all costs of operation, to determine from which wells unit production shall be produced, to approve the purchase, construction, location, abandonment or sale of compressor plant, gasoline plant, tank batteries, salt water disposal system or other facilities, to determine the manner of injection of gas, to appoint sub-committees, including legal, engineering, plant, etc., to approve or disapprove expenditures for technical advice, to provide for finances, and further provides:

"In all matters except the removal of a Unit Operator the vote on behalf of Lessees having at least 66⅔% of the total voting interest in the Unit shall control.

A Unit Operator may be removed only by the vote of at least 75% in interest of the Lessees other than such Unit Operator."

Section X provides that the Unit Operator is to conduct all operations, keep records, make statements on production, comply with Workmen's Compensation Laws, etc., with a right to resign upon six months' written notice, and Phillips Petroleum Company is named as the Unit Operator.

Section XV provides that nothing shall prevent the Operating Committee from abandoning or changing in whole or in part any particular method or methods of operation.

Section XXV provides that the Operating Committee can abandon the Unit when it shall determine that unit production can no longer be produced from the Unit Area in paying quantities and that upon such abandonment all rights shall revert to the separately owned tracts, which may thereafter continue to operate wells upon payment to the Unit of their salvage value; if such wells are not taken over, the Unit Operator is to salvage the same and disburse the proceeds in accordance with the assigned percentages. See Appendix "C", page 105.

The Unitization Act, the Order of the Commission and the Written Plan of Unitization, as approved, are not merely matters of delegated legislation—they also provide delegation of judicial power and authority. There is involved the legislative policy of determining whether a particular oil and gas field should be unitized, and, if so, the judicial power of determining the manner in which such field should be unitized and the interests to be assigned to the respective owners thereof.

The matter of determining policy may be legislative, but the matter of completely taking away control and property rights and substituting therefor something entirely different, even with notice to the lessees, is a judicial determination of rights. Judicial power was also exercised when it was determined that there existed a single common source of supply which could be subject to unitization. Judicial power is also exercised when the Commission determined the respective interests of Gulf Oil Corporation and Palmer to share in the Sterba oil and gas leasehold.

The legislative and judicial power delegated is not a delegation to a State Agency but is rather a delegation to private parties. These private parties have the power in the first instance to decide the policy of whether an oil and gas field should be unitized. The Commission or State Agency has no authority in this respect. When these private parties once determine, as a matter of policy, that the Medrano sand bodies of the West Cement Field should be unitized, then, as a part thereof, they also decide the manner in which it should be unitized, and what should be assigned to each party as his interest in such unit. The only power vested in the Commission is to approve or reject the unitization as recommended by private parties. (See Paragraph 286.4, Appendix "A")

The Commission has no authority to enlarge a Unit Plan, to amend, to alter or change such Plan, or to supervise operations under the Plan except at the will of private parties. The unlawfulness of this type of dele-

gation is discussed and referred to in an annotation in 3 ALR (2d) 188.

Even more vicious than the delegation to private parties is the discriminatory nature of the delegation whereby certain large percentages of lessees can control minority interests and at the same time protect themselves from any unwanted unitizations.

It is true that the Supreme Court of Oklahoma did not pass upon the validity of the 15 percent veto provision, suggesting that such provision was not in issue, (R. 44), but whether in issue or not, all of these percentage provisions in the Statute indicate the underlying purpose of providing control in the major interest owners, rather than a police regulation to promote conservation and protect correlative rights.

Any Unitization Act, the life, existence and operation of which depends upon the will of a percentage in interest of private parties therein, is, on its face, contrary to the principle of conservation in the public interest, and arbitrary and unreasonable as to those having an insufficient percentage in interest to protect their rights and views. The obvious result of such a percentage control in the oil and gas industry is the same today as it was 10 years ago when Winston P. Henry testified before a Subcommittee of the Committee on Interstate and Foreign Commerce, House of Representatives, 76th Cong., 3d Sess. on H. Res. 290 and H. R. 7372 (Petroleum investigation), p. 1786, as follows:

> "Practically every major pool is either largely owned by the major integrated companies before the time of discovery, or later by the purchasing of lease

properties in those fields. For example, the great East Texas field was discovered by independent operators, but is now in the hands of major integrated companies through purchases. The same condition is true of Conroe. But other great fields, like Hastings, Friendswood, and Anahuac on the Gulf Coast of Texas, and La Fitte and Villa Platte in the Gulf Coast of Louisiana were discovered and largely dominated from inception by major oil companies.

" *** In nearly every case then, it is a fair presumption that unitized operations would be placed in the hands of major integrated companies, not only because of their domination of the larger fields, but because of their organizations and capital with which the development of a large unit could be accomplished. Independent operators would, therefore, be called on to accept minor interests. Direct control of their property would be taken away from them. They would, therefore, have no say as to how their properties would be developed, or to whom their oil would be sold, or any control over the costs of development and operations. It is a further fair assumption that the integrated company placed in control of a given pool would desire to control the supply of oil from this field for its own pipe lines and refineries, and therefore, would fix the price which is paid for the oil."

In the case of *Carter v. Carter Coal Co.*, 298 U. S. 238, 56 S. Ct. 855, 80 L. Ed. 1160, it was held that a statute which conferred upon a majority of coal operators the right to regulate the affairs of the minority of coal operators was denial of due process of law. In the opinion the Court said:

"The power conferred upon the majority is, in effect, the power to regulate the affairs of an unwilling minority. This is legislative delegation in

its most obnoxious form; for it is not even delegation to an official or an official body, presumptively disinterested, but to private persons whose interests may be and often are adverse to the interests of others in the same business. The record shows that the conditions of competition differ among the various localities. In some, coal dealers compete among themselves. In other localities, they also compete with the mechanical production of electrical energy and of natural gas. Some coal producers favor the code; others oppose it; and the record clearly indicates that this diversity of view arises from their conflicting and even antagonistic interests. The difference between producing coal and regulating its production is, of course, fundamental. The former is a private activity; the latter is necessarily a governmental function, since, in the very nature of things, one person may not be entrusted with the power to regulate the business of another, and especially of a competitor. And a statute which attempts to confer such power undertakes an intolerable and unconstitutional interference with personal liberty and private property. The delegation is so clearly arbitrary, and so clearly a denial of rights safeguarded by the due process clause of the Fifth Amendment, that it is unnecessary to do more than refer to decisions of this court which foreclose the question."

In the case of *Eubank v. City of Richmond*, 226 U. S. 137, 57 L. Ed. 156, an ordinance had been passed which required the committee on streets upon request of owners of 2/3rds of the abutting property to establish a building line not less than five feet or more than thirty feet from the street line. The Court held that such an ordinance was violative of due process and stated as follows:

"This we emphasize. One set of owners determines not only the extent of use, but the kind of use

which another set of owners may make of their property. In what way is the public safety, convenience, or welfare served by conferring such power? The statute and ordinance, while conferring the power on some property holders to virtually control and dispose of the property rights of others, creates no standard by which the power thus given is to be exercised; in other words, the property holders who desire and have the authority to establish the line may do so solely for their own interest, or even capriciously. Taste (for even so arbitrary a thing as taste may control) or judgment may vary in localities, indeed, in the same locality. There may be one taste or judgment of comfort or convenience on one side of a street and a different one on the other. There may be a diversity in other blocks; and, viewing them in succession, their building lines may be continuous or staggering (to adopt a word of the mechanical arts) as the interests of certain of the property owners may prompt against the interests of others. The only discretion, we have seen, which exists in the street committee or in the committee of public safety, is in the location of the line, between 5 and 30 feet. It is hard to understand how public comfort or convenience, much less public health, can be promoted by a line which may be so variously disposed."

In the case of *Washington ex rel. Seattle Title Trust Co. v. Roberge*, 278 U. S. 116, 73 L. Ed. 210, a zoning ordinance provided for the right to maintain a home for aged persons within a particular district dependent upon the consent of the owners of 2/3rds of the property within 400 feet of the proposed home. The Court held this portion of the ordinance to be unconstitutional and stated:

"The section purports to give the owners of less than one-half the land within 400 feet of the pro-

posed building authority—uncontrolled by any standard or rule prescribed by legislative action—to prevent the trustee from using its land for the proposed home. The superintendent is bound by the decision or inaction of such owners. There is no provision for review under the ordinance; their failure to give consent is final. They are not bound by any official duty, but are free to withhold consent for selfish reasons or arbitrarily, and may subject the trustee to their will or caprice. Yick Wo v. Hopkins, 118 U. S. 356, 366, 368, 30 L. Ed. 220, 225, 226, 6 Sup. Ct. Rep. 1064. The delegation of power so attempted is repugnant to the due process clause of the 14th Amendment."

The matter of having percentage control by parties in interest is contrary to the principle of a police statute to conserve natural resources, and has no relation to either conservation or the protection of correlative rights.

The principle recognized in *Parker v. Brown*, 317 U. S. 341, 63 S. Ct. 307, 87 L. Ed. 315 (1943), holding that a percentage control over a marketing program when approved by a State Agency was not invalid under the Sherman Act, cannot be extended to sustain the validity of percentage control over a police statute which drastically deprives persons of property and contract rights. The case of *Currin v. Wallace*, 306 U. S. 1, 83 L. Ed. 441, 59 S. Ct. 379, involving a delegation by Congress under the "commerce" power where uniformity is not required, is not an authority for a purported police statute.

III.

SAID STATUTES, ORDER AND PLAN OF UNITIZATION DEPRIVE LANDOWNERS AND ROYALTY OWNERS OF PROPERTY RIGHTS WITHOUT DUE PROCESS AND IMPAIR THEIR CONTRACT RIGHTS, DENYING THEM EQUAL PROTECTION OF THE LAW. THIS CONENTION IS COVERED BY ASSIGNMENT OF ERROR (h). (Brief page 6)

House Bill 339 mentions the land owner or royalty owner in very few places.

Section 286.9 provides:

> "The obligation or liability of the lessee or other owners of the oil and gas rights in the several separately-owned tracts for the payment of unit expense shall at all times be several *** the unit shall have a first and prior lien upon the leasehold interest only in the unitized common source of supply (exclusive of a one-eighth (⅛) royalty interest) in and to each separately owned tract *** the interest of the lessee or other person who *** are obligated or responsible for the cost and expense of developing and operating a separately-owned tract *** shall *** be primarily responsible *** for unit expense *** and resort may be had to overriding royalties, oil and gas payments, royalty interests in excess of a one-eighth (⅛) of the production *** only in the event the owner of the interest primarily responsible fails to pay such assessment *** A one-eighth (⅛) part of the unit production allocated to each separately owned tract shall in all events be regarded as royalty to be distributed *** the royalty owners free and clear of all unit expense *** ."

Section 286.10 provides, in part:

> "Property rights, leases and other contracts, and all rights and obligations shall meet the provisions

and requirements of this Act and to any valid and applicable plan of unitization or order of the commission made and adopted pursuant hereto, but otherwise to remain in full force and effect.

The amount of the unit production allocated to each separately owned tract within the unit *** shall be distributed among or the proceeds thereof paid to the several persons entitled to share in the production for (from) such separately owned tracts in the same manner *** same proportions and *** same conditions that they would have participated and shared *** from such separately owned tract had not said unit been organized. *** ."

Section 286.17 provides, in part:

"No agreement between or among lessees or other owners of oil and gas rights *** entered into pursuant hereto *** shall be held to violate any statutes of this State prohibiting monopolies *** ."

The Plan of Unitization, as approved, makes no mention of the land or royalty owners except provisions similar to the Statute for liens for expenses which is provided under Section 11 of the Plan.

No one would deny that under the Statute and the Plan of Unitization approved thereunder, the royalty owners had been deprived of substantial contract and property rights. It is true that some royalty owners appeared in the proceedings before the Commission (not the Sterbas) in an effort to protect their rights and on appeal are here as Appellants in Cause 302. However, under no provision of the Unitization Act are the land or royalty owners made necessary parties to the proceedings, nor is there any provision in the Unitization

Act for actual notice to them of the pendency of such proceedings. Although a general publication notice was given (R. 184, 200) it is doubtful whether such notice is sufficient under the due process clause of the Federal Constitution. See *Mullane v. Central Hanover Bank and Trust Company*, 339 U. S. 306, 70 S. Ct. 657, 94 L. Ed. 865.

In addition to this lack of actual or sufficient notice, there is no provision in the Statute giving the land and royalty owners the same or similar rights which are given to lessees, (percentagewise, or otherwise). As a matter of fact, the land and royalty owners are given no rights whatsoever under the provisions of the statute, which constitutes an unfair and unreasonable discrimination against them. No land or royalty owner or any percentage of them have the right to petition for, formulate or recommend a Plan of Unitization under the Statute. No land or royalty owner has the right to nullify, amend or enlarge a Plan of Unitization, or in any manner control or supervise the operation or final dissolution of any Plan which may be approved.

The rights of land and royalty owners under oil and gas leases have, for many years, been recognized under the laws and judicial decisions of Oklahoma and other States. The royalty owner usually, as in this case, has the right to one-eighth of the oil and gas produced, free and clear of cost of production, and the lessee owns 7/8ths, subject to the cost and expense of production, and, possibly further subject to overriding royalty, as in this case, is vested in Gulf Oil Corporation. The landowners and royalty owners under repeated judicial de-

cisions are entitled to compel their lessees to comply with all express and implied covenants of the oil and gas lease. The express covenants, of course, are contained within the terms and provisions of the lease (see Appendix "D", page 158, but the implied covenants have been developed by judicial decisions in recognition of the disparity of interests existing between the royalty owner and the lessee. See Merrill, "*Covenants Implied in Oil and Gas Leases*", (2d Ed., Sec. 15, (1940)). These implied covenants cover the duties of the lessee to reasonably explore, develop and operate the leasehold, including the marketing of the products produced therefrom. When, under House Bill 339, the royalty owners have no right to petition for unitization, formulate, enlarge, amend or otherwise control the operation of the Unit, there is a clear discrimination which has no relation to the conservation of oil and gas and militates against the principle of protecting correlative rights.

It is recognized in the oil industry that the customary one-eighth royalty which is free and clear of the cost of development and operation is substantially of the same value as the seven-eighths working interest burdened with the costs of development and operation in accordance with the established law. See *Glassmire, Oil and Gas Leases and Royalties,* 2d Ed., Sec. 16, page 60. If it is considered that unitization is a more efficient operation which will result in a greater ultimate recovery of oil at a less cost, the land and royalty owners, as well as the lessees, should share in the benefits thereof, which would necessitate an increase in the cus-

tomary one-eighth royalty or provide for some other form of compensation. See *Merrill, "Stabilization of the Oil and Gas Industry and Due Process of Law,* 3 S. Cal. L. Rev. 396, 408 (1930).

The Appellees will attempt to justify this inequality between land owners or royalty owners and lessees on the grounds that the lessees will fairly represent the rights of lessors, and, therefore, will be equally protected with the lessees. It is true that the landowners and the royalty owners have some interests in common with the lessees, but their interests are many times adverse and conflicting and they cannot safely expect to be protected by their lessees, or even by a disinterested Commission. See *Merrill, "Implied Covenants and Secondary Recovery,* 4 Okl. L. Rev. 177, 196, 198 (1951). It is also to be noted that the Statute (Sec. 286.2, Appendix "A", page 77) discriminates against those pools which, on the effective date, were being operated under pressure maintenance, or which are twenty years of age at the time of the effective date of such Statute. This discrimination has no relationship to conservation or the protection of correlative rights. See 21 Okl. Bar Journal 1802.

IV.

SAID STATUTES, ORDER AND PLAN ARE NOT MERE REGULATIONS BUT IN FACT CONSTITUTE LAWS ADMINISTERED BY THE UNCONTROLLED DISCRETION OF PRIVATE PARTIES WHICH DRASTICALLY AND UNREASONABLY DESTROY VESTED PROPERTY AND CONTRACT RIGHTS. THIS CONTENTION IS COVERED BY ASSIGNMENT OF ERRORS (b), (c), (d), (e), (g). (i) and (o). (Brief pages 5, 6, 7)

The pertinent portions of House Bill 339, provide as follows:

> Sec. 286.8. "From and after the effective date of an Order of the Commission approving the creation of a unit and approving the plan of unitization *** the drilling of any well into or the operation of any well producing from the common source of supply *** by persons other than the unit *** shall be unlawful and is hereby prohibited *** ."
>
> Sec. 286.10. "Property rights, leases and other contracts and all rights and obligations shall meet the provisions and requirements of this Act and to any valid and applicable Plan of unitization or order of the Commission made and adopted pursuant hereto *** ."

The pertinent portions of the Plan of Unitization provide as follows:

> Par. XX. "The unit shall have a servitude and right of way on, over and across all of the lands in the Unit Area for the purpose of laying, constructing, building, using and maintaining, operating, changing, repairing and removing pipe lines, tanks, telegraph and telephone lines, water lines and other facilities for the development and operation of the Unit Area for Oil and Gas and for the gathering, handling and disposal of the Unit Production; ***

Par. VI. "The adoption of this Plan *** and the creation of the Unit *** shall have the effect of unitizing all further development and operations for the production of oil and gas from the Unit Area and of pooling and unitizing the production so obtained *** as if the Unit Area had been included in a single lease and all rights thereunder owned by the lessees in undivided interests. Property rights, leases, contracts and all other rights and obligations in respect to the oil and gas leases in and to the several Separately Owned Tracts within the Unit Area are hereby amended and modified to the extent necessary to make the same conform to the provisions and requirements of this Plan. *** The relationship between lessees *** shall not be that of a trust, partnership or association but shall be in the nature of the tenancy in common. *** the unit production allocated to each separately owned tract and only that amount, regardless of the well or wells in the Unit Area from which it may be produced *** and whether it be more or less than the amount of production from the well or wells *** on any such separately owned tract shall, for all intents, uses and purposes, be regarded and considered as production from such separately owned tract. Operations carried on under *** this Plan shall be regarded *** as a fulfillment of and compliance with all provisions, covenants *** express or implied, of the several oil and gas mining leases within the Unit Area or other contracts pertaining to the development thereof, to the same extent that the development and operation of and the production of Oil and Gas from each of the several separately owned tracts within the Unit Area would have constituted a fulfillment of and compliance with such leases and contract. Wells drilled or operated on any part of the Unit Area *** shall for all purposes be regarded as wells drilled on each separately owned tract *** ."

There is no doubt that conservation of oil and gas is a wise policy and that under the police power of a State great latitude exists for the enactment of legislation to promote conservation, but there are limitations beyond which the State cannot go without encroaching upon the Federal Constitution. *Penn Coal Co. v. Mahon*, 260 U. S. 393, 43 S. Ct. 158, 676 L. Ed. 322. House Bill No. 339, Order of the Commission No. 20289, and the Written Plan of Unitization as approved thereunder, under the facts of this case, go much further than is reasonably necessary for the purpose of conserving oil or gas or protecting correlative rights, and in fact destroy contract and property rights without compensation.

It is said in *Summers, Law of Oil and Gas*, Vol. 1, Sec. 106, p. 304, as follows:

> "With the most modern scientific methods of locating earth structures, it is impossible now, as it was in the beginning of the oil and gas industry, for anyone to know, prior to actual drilling and production, of the existence and amount of oil or gas within or capable of being produced from a particular tract of land. This fact makes it unwise from the view point of either the landowner or the producer to sell the oil and gas or the privilege of producing it for a present cash consideration."

In this case, Palmer's and Sterbas' property and contracts are taken from them for a consideration fixed by private parties without even an appraisement being made by disinterested parties. Even where property is taken for condemnation for public purposes, an orderly and judicial procedure is required whereby the property

owner receives "just compensation". It must be assumed that neither Palmer nor Sterbas would have sold their rights under the leasehold to Phillips Petroleum Company or the Operating Committee at any price, or, if at any price, they would have the right to fix that price or at least negotiate for the consideration. The least that the Statute could have done in fairness to Palmer and Sterbas, and others similarly situated, would have been to make it possible for them to sell their entire interest to the Unit Operator, or the Operating Committee at a consideration to be fairly determined in a judicial proceeding rather than to turn over the operation of the leasehold to such parties merely for an assigned percent in future production from the Unit. Even where the State takes property for public purposes, it cannot fix the value of the property taken. That value must be determined in an orderly judicial procedure.

The impact of the Commission's Order 20289 approving the Written Plan of Unitization is to take from Palmer and give to private parties the operation of Palmer's oil and gas leasehold estate, such private parties, without Palmer's consent and over its objections, determining the interest to which Palmer will be entitled, thus putting Palmer, an independent oil producer, off its property and completely out of business in the field involved.

The impact of Order 20289 approving the Written Plan of Unitization for the Sterbas is to completely abrogate the oil and gas lease contract, destroying Sterbas' right

to have Palmer operate their lease and the right to compel performance of the lessee's contractual obligations, express and implied, under the lease without having participated in the proceedings before the Commission.

The property and contract rights of Sterbas and Palmer are fixed under the terms of the oil and gas lease dated February 13, 1936, and these parties had respected those rights and conformed thereto. Palmer had drilled and operated said leasehold in accordance with those rights, until the Order of the Commission of September 5, 1947, about ten years subsequent to the time that their rights were vested and established. It is one thing to have rights disturbed under provisions of a law existing at the time such rights are created; it is quite another thing to undertake a business enterprise or make a contract upon legal rights as they exist and at a subsequent time, by a law administered by the uncontrolled discretion of private parties and a Commission's Order approving the same, have those contract and property rights annihilated over one's objection. See *Merrill, Stabilization of The Oil Industry and Due Process of Law*, 3 S. Cal. L. Rev. 396, 409-410 (1930).

That Paragraphs 286.4 and 286.5 (Appendix "A", pp. 78, 79) of the Unitization Act are too vague, broad and unspecific to provide any reasonable guide to the Commission in approving any Order thereunder, was clearly shown by the fact that the Commission in its order was unable to be more specific or definite than the law itself, and the Plan of Unitization likewise was not positive or definite in purpose, time or manner of unitization, leav-

ing all of these matters within the uncontrolled discretion of the vote of 66 2/3 percent of lessees within the unit area. See annotation, 70 *L. Ed.* 322.

The so-called facts required to be found under Section 286.4 of the Unitization Act, after a finding of which the Commission is required to enter an order approving the Unit, are not facts in any sense of the word, but are merely generalities which could not operate as standards or guides for any specific Plan of Unitization.

V.

THE UNDISPUTED EVIDENCE ESTABLISHED THAT GEOLOGICAL FAULTS SEPARATED THE MEDRANO SAND INTO SEVERAL SEPARATE AND DISTINCT COMMON SOURCES OF SUPPLY. THIS CONTENTION IS COVERED BY ASSIGNMENT OF ERRORS (f) AND (r). (Brief pages 5, 8)

The pertinent portions of House Bill 339 are as follows:

> Sec. 286.2. "This Act shall apply only to common sources of supply of oil, oil and gas, or gas distillate in this State *** ."
>
> Sec. 286.5. " *** Each unit and unit area shall be limited to all or a portion of a single common source of supply. Only so much of a common source of supply as has reasonably been defined by actual drilling operations may be so included within the unit area *** ."

Irrespective of the specific requirements of House Bill 339 above quoted, it would not be a proper exercise of the police power to unitize several separate and distinct common sources of supply as one unit on the theory of

conservation and the protection of correlative rights, since the protection of correlative rights could not be reasonably provided for in such a unit. See *H. F. Wilcox Oil and Gas Company v. State,* 162 Okl. 89, 19 P. (2d) 37. That faults can and do constitute impervious barriers sufficient to separate a homogeneous sand dividing it into several common sources of supply is well demonstrated by the *Wilcox* case above referred to which involved several common sources of supply caused by faults in the Wilcox and other sands in the Oklahoma City Field.

The finding of the Commission that the Medrano sand of the West Cement Field constitutes a single common source of supply is wholly unsupported by the evidence. All of the known facts adduced in evidence disclosed that the Medrano sand of the West Cement Field is traversed by several impervious geological faults of such magnitude as to completely separate said sand into several separate and distinct sand bodies or separate common sources of supply. The conclusive nature of the evidence is demonstrated by the fact that it was, in its most important aspects, adduced by way of cross examination of appellees' witnesses proposing the Plan of Unitization. (R. 325-328, 389, 553-555, 903)

There was introduced into evidence as Exhibit 92, (R. 1047-1052), a letter written by C. P. Dimit, Vice-President of Phillips Petroleum Company, under date of March 21, 1944, to the Petroleum Administrator of War, the nature of which was to state almost positively that there were impervious barriers in the Medrano sand

caused by geological faults. (R. 1466-1477) The substance of this letter was never denied.

The engineers' committee report, Exhibit 71, is predicated upon the existence of five separate and distinct common sources of supply or segments, each of which has different characteristics and values. The only specific comment that the report of the engineers' committee made with respect to the faults is on page 4 thereof, which states:

> "Transverse faults divide the pool into five segments herein designated as segments a, b, c, d, and e, lettered from east to west."

The report of the engineers' committee considers all pertinent engineering factors, not from the standpoint of all Medrano sand bodies constituting one common source of supply, but as those factors relate to each separate segment of the Medrano sand bodies. All estimates, computations and calculations were separately made with reference to the information and characteristics of the sand conditions as existing in each of the separate segments. A more eloquent statement that the Medrano sand bodies of the West Cement Field constitute several common sources of supply can hardly be conceived of than that disclosed by Exhibit 71; (R. 1419-1460) and this conclusion is confirmed by the silent acquiescence of every member of the engineers' committee by their failing to explain the segment treatment given in their report. The Isobaric Map, Exhibit 72, R. 1506, 903, prepared by the engineers' committee in

1945, definitely showed pressure variances between each of the separate segments.

The only written geological report ever made by the geologists' committee, was introduced into evidence as Exhibit 68 (R. 1414-1449, 389) which was made in October, 1945. This report states that the committee concluded that the Edwards fault constituted a complete barrier and that there was lack of free communication between the several fault segments. All exhibits prepared by the geologists' committee, including 54 (R. 1495, 318), 55 (R. 1497, 325), 56 (R. 1499, 327), 57 (R. 1501, 328) and similar exhibits 54R (R. 1495, 899-90), 55R (R. 1497), 56R (R. 1499) and 57R, (R. 1501), which superseded the same, showed these various faults without limitations. For instance, on Exhibit 54 (R. 1495) the minus 4600 contour line on the left side of the Sterba fault meets the Sterba fault line at a point more than 350 feet from the point where the minus 4600 contour line on the right side of the Sterba fault meets the Sterba fault line, thus showing a complete separation of the oil zone in the Medrano sand. These contours were established from the actual information obtained from the Palmer-Sterba No. 6 dry hole. On the same exhibit the minus 3400 contour on the left side of the Sterba fault meets the Sterba fault line at a point more than 600 feet from the point where the minus 3400 contour line on the right side of the Sterba fault reaches the Sterba fault line, showing a vertical separation of approximately 600 feet between the Medrano sand on one side of the fault from the Medrano sand on the other side of the

fault. A minus 2900 foot contour on the left side of the Sterba fault meets the Sterba fault line at almost the same point where the minus 3100 foot contour line on the right side of the fault makes a 200 foot displacement in the Medrano sand on either side of the fault. These contours were established by the actual facts secured from Palmer-Sterba No. 5 dry hole and Magnolia-Henley No. 2 dry hole. The actual known facts establish, therefore, that the Sterba fault completely separates the Medrano sand into at least two common sources of supply and these known facts are reflected on Exhibit 54. (R. 1495) Various exhibits, prepared by Appellants, which were based upon Exhibits prepared by Appellees, including Exhibits 65 (R. 1503, 389), Exhibit 66 (R. 1504, 389) and Exhibit 67 (R. 1505, 389) show clearly that the Medrano sand was completely separated by the Sterba fault and Appellants' expert witnesses so testified. The only evidence in the record (which is not competent evidence) was the unfounded expert opinions of H. D. Kaveler and A. J. Montgomery, both employees of Phillips Petroleum Company, and witnesses for Appellees, and Exhibits 12 to 23, both inclusive, (R. 1345-1401), which were copies of previous orders made by the Commission under the General Conservation Law. Mr. Kaveler and Mr. Montgomery both admitted that faults completely separated the oil zone of the Medrano Sand, but disregard d the known facts upon which their expert opinions were purportedly based, and expressed the further opinion that somewhere in the gas zone these faults lost their effectiveness. (R. 732) An expert's

opinion cannot be accepted as competent evidence where inconsistent with the known facts upon which such opinion is based. *First National Bank v. Texas*, 20 Wall (U. S.) 72, 22 L. Ed. 295. The rule was applied in the case of *Myers, et al v. Shell Petroleum Company*, 153 K. 287, 110 P. (2d) 810, involving an action for damages for drainage in an oil and gas pool—a pool in Kansas quite similar in nature to the Medrano sand of the West Cement Field. Expert witnesses testified as to the porosity, permeability, pressure, etc., based upon factual information obtained from wells or control points approximately one-half mile from the point in question. The Supreme Court of Kansas held that expert opinions of this nature were nothing more than mere conjecture and the Court stated in paragraph 7 of the syllabus as follows:

> "In order to render expert opinion testimony sufficient, when tested by demurrer, it is necessary that the opinion be based upon facts sufficiently definite and certain to relieve the jury from reaching an arbitrary conclusion."

Referring to Exhibits 12 to 23, both inclusive (R. 1345-1401) the issue in those proceedings was proration under the General Conservation Laws. Those orders cannot be considered as evidence against Appellants in these proceedings where the basic fact is whether a single common source of supply exists. Be that as it may, the Commission never treated its previous orders with respect to the Medrano Sand as constituting a binding determination at any time. In each order, as will be

disclosed by a careful examination of Exhibits 12 to 23, inclusive, the Commission undertook to decide the question of single common sources of supply upon the evidence presented at each such time. It does not appear that the Commission was ever furnished, prior to these unitization hearings with evidence showing the nature and extent of the faults existing in the Medrano sand of the West Cement Field.

The decision of the Supreme Court of Oklahoma to the effect that the Commission's finding was conclusive being based upon conflicting expert opinion is indicative that the Supreme Court of Okahoma did not carefully examine the facts upon which the opinions were based but merely accepted the findings of the Commission as prima facie correct.

VI.

SAID ORDER AND PLAN, WITH ITS DIVISION OF INTEREST THEREIN ARE UNREASONABLE, ARBITRARY AND CAPRICIOUS IN THE LIGHT OF THE UNDISPUTED EVIDENCE. THIS IS COVERED BY ASSIGNMENT OF ERRORS (p) AND (q). (Brief page 8)

(1) The evidence disclosed that at the time the Order was entered two-thirds of the gas reservoir energy had been produced and expended. The operation of the compulsory unit contemplated the future drilling of approximately seven oil wells at uncertain locations; that certain gas wells would be shut in and any gas thereafter produced would be reinjected in the Medrano sand bodies. Since Appellees' pronounced purpose of this unitization is to conserve the gas energy, it is perfectly obvious that

the Unit, to be successful, should have been established before two-thirds of the gas energy has been expended. ("Petroleum Conservation", page 216, (1950)). Gas in the Medrano sand was first discovered in 1936. By the time oil was discovered in 1943, more than one-third of the total gas reservoir energy had been exhausted and by the time Order No. 20289 was entered more than two-thirds of the gas energy had been exhausted. (R. 609) This depletion of gas was largely the result of the operations of those who now propose compulsory unitization. Any compulsory unitization predicated on reinjection of gas where the gas energy is more than two-thirds exhausted, which at the same time destroys contract and property rights, has no reasonable basis. General conservation laws in Oklahoma already existing were amply sufficient to provide protection to the remaining one-third gas energy in the Medrano sand. See *Denver Producing and Refining Company v. State, et al.*, 199 Okl. 171, 184 P. (2d) 961.

(2) The Plan includes within the Unit considerable acreage not proven to contain productive oil or gas.

Thirty-four tracts of land upon which no well had been drilled (see Exhibit 24, R. 173, 210) were assigned interests and included within the Unit. There was also included within the Unit several tracts of land upon which completed wells to the Medrano sand thereon had established that such tracts were unable to produce oil and gas in commercial quantities. These tracts, undrilled and dry, constituted approximately 1020 surface acres. Under the established law, where no wells are drilled, or,

where the wells drilled result in dry holes, the tracts are valueless for oil and gas purposes; nevertheless, these tracts were included within the unit which was unfair to the other tracts proven by actual production.

(3) The chief objection to the basis of the division of interest is that it fails to include any consideration whatsoever of existing legal rights of the parties under established law and the leasehold contracts. It was clearly deficient in the following respects:

(a) Under the established law Palmer has the right to produce all oil from any well completed above 6000 feet on the Palmer-Sterba lease. This right included the right to produce all oil from any well completed at a depth of 6000 feet or above, whether such oil came from below or above 6000 feet. Palmer had two oil wells so completed. Although Gulf may have the right to produce from wells completed below a depth of 6000 feet, it never exercised this right by drilling such wells and, therefore, under the law had not established any right to produce oil from the Sterba lease. Nevertheless, Gulf's interest was determined by Appellees by running a horizontal plane at the depth of 6000 feet on the Palmer-Sterba lease and allowing Gulf all oil estimated to be in place below the depth of such plane.

(b) Palmer had, over a period of approximately ten years prior to the institution of this proceeding before the Commission, assumed the dry hole risk in the drilling of its several oil and gas test wells on the Sterba lease, two of which proved to be dry holes. The extent of this risk and expense on wells drilled to the depth

of approximately 6000 feet is a factor of great importance to one engaged in the oil and gas business as an independent operator. In the fixing of interests to the respective leases in the Plan, Palmer is given no consideration whatsoever for its risk and expense undertaken and incurred. Under the established law relating to a lessee's compliance with drilling obligations, express or implied, under an oil and gas lease the assumption of these risks and expenses would have had great weight in determining whether or not Palmer had complied with its duties and obligations to its lessors, the Sterbas.

(c) Palmer was admittedly an efficient (R. 729) operator and had fully complied with all of the express and implied covenants of its leasehold. Palmer received no consideration for these commendable qualities. No consideration was given to comparative lifting costs as between leases in the Unit, although the Statute specifically required that "burden of operation" be considered in determining the division of interest.

(d) The basis for the division of interest in the Plan also included unreasonable and arbitrary considerations, such as estimating acre feet of sand on the basis of contouring, which was mere guess-work, (R. 327), using uncertain recovery factors (R. 561, 562), and using an indefinite "current income" factor based upon allowable oil and gas runs rather than actual productive capacity of wells. (R. 708, 71)

CONCLUSION.

On May 26, 1951, prior to the time that the judgment and decision of the Supreme Court of Oklahoma became final in this Cause, House Bill 339, 1945 Oklahoma Legislature, was repealed by Senate Bill 203 of the 1951 Oklahoma Legislature. Thereupon, the Supreme Court of the United States required a decision by a Court of proper jurisdiction in Oklahoma on the effect of such repeal upon Appellants' rights in this cause. By additional proceedings in the Supreme Court of Oklahoma, a decision on this question was made under date of December 5, 1951, (R. 1536-1538) holding that Appellants' rights were not affected by such repeal.

Although the Supreme Court of Oklahoma in a sense minimized the extent of the repeal of House Bill 339, an examination of the repealing Statute, (Senate Bill 203; see Statement as to Jurisdiction, Appendices J, page 302) clearly discloses that it substantially enlarges the jurisdiction of the Corporation Commission of Oklahoma and eliminates many features of House Bill 339 that are objectionable under the Federal Constitution. In essence, Senate Bill 203 constitutes a new and different type of Unitization Statute.

Section 2 of the new Act vests in the Commission a broad jurisdiction. Section 3 permits the filing of a petition by anyone, including the Commission, with a recommended Plan of Unitization for any pool or field. All percentage provisions in respect to the amendment, enlargement or nullification of a Plan of Unitization have been completely eliminated, except the condition requir-

ing ratification of the Plan by sixty-three percent of the lease and royalty owners by unit area under Section 5. There is no discrimination between the landowner or royalty owner and lessees and the only percentage provision remaining in the Statute is that above referred to in Section 5 thereof.

The passage of this new Act and the repeal of the old Act complained of indicate legislative questioning of the fairness, constitutionality and separability of the provisions of House Bill No. 339 here objected to.

The Appellants in this case have been forced into a Unit under a Plan of Unitization pursuant to a Statute which no longer exists. The Statute and Plan are unconstitutional. It is requested that the Supreme Court of the United States adjudge that House Bill 339 of the Oklahoma Legislature and the Plan of Unitization were unconstitutional in their entirety and reverse the decision and judgment of the Supreme Court of Oklahoma entered March 20, 1951.

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of Wichita, Kansas;
CHARLES E. JONES,
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APPENDIX "A"

HOUSE BILL NO. 339 OF THE 1945 OKLAHOMA LEGISLATURE

UNITIZED MANAGEMENT OF COMMON SOURCES OF SUPPLY (NEW)

Par. 286.1. LEGISLATIVE DECLARATION.—The Legislature finds and determines that it is desirable and necessary, under the circumstances and for the purposes hereinafter set out, to authorize and provide for unitized management, operation and further development of the oil and gas properties to which this Act[1] is applicable, to the end that a greater ultimate recovery of oil and gas may be had therefrom, waste prevented, and the correlative rights of the owners in a fuller and more beneficial enjoyment of the oil and gas rights, protected. Laws 1945, p. 162, Par. 1.

Par. 286.2. COMMON SOURCES OF SUPPLY TO WHICH ACT IS APPLICABLE.—This Act[1] shall apply only to common sources of supply of oil, oil and gas, or gas distillate in this State.

The provisions of this Act shall not apply to any common source of supply of oil, oil and gas, or gas distillate or any part or parts thereof which at the effective date of this Act are being operated by or under pressure maintenance, repressuring, or secondary recovery methods or operations, provided, that nothing contained in this Act shall prevent the voluntary inclusion and extension of areas in which are located such existing pressure maintenance, repressuring, or secondary recovery methods or operations as unit areas under the provisions of this Act. Provided this Act shall not apply to any field where the discovery well has been drilled twenty (20) years

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[1]Sections 286.1-286.17 of this title. Approved April 19, 1945. Effective 90 days after April 26, 1945, date of adjournment.

prior to the effective date of this Act. Laws 1945, p. 162, Par. 2.

Par. 286.3. JURISDICTION OF CORPORATION COMMISSION.—Subject to the limitations of this Act[1] the Corporation Commission of the State of Oklahoma, hereinafter referred to as the "Commission", is hereby vested with jurisdiction, power and authority, and it shall be its duty, to supervise the administration of this Act. Laws 1945, p. 163, Par. 3.

Par. 286.4. THE PETITION FOR AND ORDER CREATING UNIT.—If upon the filing of a petition therefor and after notice and hearing, all in the form and manner and in accordance with the procedure and requirements hereinafter provided the Commission shall find (a) that the unitized management, operation and further development of a common source of supply of oil and gas or portion thereof is reasonably necessary in order to effectively carry on pressure-maintenance or repressuring operations, cycling operations, water flooding operations, or any combination thereof, or any other form of joint effort calculated to substantially increase the ultimate recovery of oil and gas from the common source of supply; and (b) that one or more of said unitized methods of operation as applied to such common source of supply or portion thereof are feasible, will prevent waste and will with reasonable probability result in the increased recovery of substantially more oil and gas from the common source of supply than would otherwise be recovered; and (c) that the estimated additional cost, if any, of conducting such operations will not exceed the value of the additional oil and gas so recovered; and (d) that such unitization and adoption of one or more of such unitized methods of operation is for the common good and will result in the general advantage of the owners of the oil and gas rights within the common source of supply or portion thereof directly affected, it shall make a finding to that effect and

[1]Sections 286.1-286.17 of this title.

enter an order approving the creation of a unit composed of the lessees and other persons who under the plan of unitization approved by the Commission are chargeable with the responsibility and cost of conducting such unitized methods of operation, development of the common source of supply or portion thereof described in the order, all upon such terms and conditions, as may be shown by the evidence to be fair, reasonable, equitable and which are necessary or proper to protect, safeguard, and adjust the respective rights and obligations of the several persons affected, including royalty owners, owners of overriding royalties, oil and gas payments, carried interests, mortgagees, lien claimants and others, as well as the lessees. To give the Commission jurisdiction hereunder, the petition shall be filed by, or with the authority of, lessees of record of fifty percent (50%) or more of the area of the common source of supply or portion thereof sought to be unitized. The petition shall set forth a description of the proposed unit area with a map or plat thereof attached, must allege the existence of the facts required to be found by the Commission as hereinabove provided and shall have attached thereto a recommended plan of unitization applicable to such proposed unit area and which the petitioners consider to be fair, reasonable and equitable. Laws 1945, p. 163, Par. 4.

Par. 286.5. UNIT AREA AND PLAN OF UNITIZATION.—The order of the Commission shall define the area of the common source of supply or portion thereof to be included within the unit area and prescribe with reasonable detail the plan of unitization applicable thereto.

Each unit and unit area shall be limited to all or a portion of a single common source of supply. Only so much of a common source of supply as has reasonably been defined by actual drilling operations may be so included within the unit area.

A unit may be created to embrace less than the whole of a common source of supply only where it is shown by the evidence that the area to be so included within the unit area is of such size and shape as may be reasonably

required for the successful and efficient conduct of the unitized method or methods of operation for which the unit is created, and that the conduct thereof will have no material adverse effect upon the remainder of such common source of supply.

The plan of unitization for each such unit and unit area shall be one suited to the needs and requirements of the particular unit dependent upon the facts and conditions found to exist with respect thereto. In addition to such other terms, provisions, conditions and requirements found by the Commission to be reasonably necessary or proper to effectuate or accomplish the purpose of this Act, and subject to the further requirements hereof, each such plan of unitization as the parties thereto may agree upon shall be fair, reasonable and equitable, and among other proper and equitable provisions, shall provide:

(a) For the efficient unitized management or control of the further development and operation of the unit area for the recovery of oil and gas from the common source of supply affected. Under such a plan the actual operations within the unit area may be carried on in whole or in part by the several lessees of leases within the unit area, subject to the supervision and direction of the unit, or may be conducted in whole or in part by the unit or some particular operator or operators of a lease or leases in the approved unit area dependent upon what is most beneficial or expedient. The designation of the operator shall be by vote of the lessees in the unit in a manner provided in the plan of unitzation and not by the Commission.

(b) The division of interest or formula for the apportionment and allocation of the unit production, among and to the several separately-owned tracts within the unit area such as will reasonably permit persons otherwise entitled to share in or benefit by the production from such separately-owned tracts to produce or receive, in lieu thereof, their fair, equitable and reasonable share of the unit production or other benefits thereof. A separately-owned tract's fair, equitable, and reasonable share of the unit

production shall be measured by the value of each such tract for oil and gas purposes and its contributing value to the unit in relation to like values of other tracts in the unit, taking into account acreage, the quantity of oil and gas recoverable therefrom, location on structure, its probable productivity of oil and gas in the absence of unit operations, the burden of operation to which the tract will or is likely to be subjected, or so many of said factors, or such other pertinent engineering, geological, or operating factors, as may be reasonably susceptible of determination. Unit production as that term is used in this Act shall mean and include all oil and gas produced from a unit area from and after the effective date of the order of the Commission approving the creation of the unit regardless of the well or tract within the unit area from which the same is produced;

(c) The manner in which the unit and the further development and operation of the unit area shall or may be financed and the basis, terms and conditions on which the cost and expense thereof shall be apportioned among and assessed against the tracts and interests made chargeable therewith, including a detailed accounting procedure governing all charges and credits incident to such operations. Upon and subject to such terms and conditions as to time and rate of interest as may be fair to all concerned, reasonable provisions shall be made in the plan of unitization for carrying or otherwise financing lessees who are unable to meet their financial obligations in connection with the unit.

(d) The procedure and basis upon which wells, equipment and other properties of the several lessees within the unit area are to be taken over and used for unit operations, including the method of arriving at the compensation therefor, or of otherwise proportionately equalizing or adjusting the investment of the several lessees in that project as of the effective date of unit operations.

(e) For the creation of an operating committee to have general over-all management and control of the unit and the conduct of its business and affairs and the operations

carried on by it, together with the creation or designation of such other subcommittees, boards or officers to function under authority of the operating committee as may be necessary, proper or convenient in the efficient management of the unit, defining the powers and duties of all such committees, boards or officers and prescribing their tenure and time and method for their selection. Each lessee within the unit area shall be entitled to representation on the operating committee and shall have a vote equal to the proportionate interest of such lessee in the unit, provided, where the voting interest of a lessee is such as to control the action taken by the committee, the vote of such lessee shall not serve to carry or defeat action by the committee unless such vote is supported by the vote of a majority of the remaining lessees.

(f) The time when the plan of unitization shall become and be effective;

(g) The time when and conditions under which and the method by which the unit shall or may be dissolved and its affairs wound up. Laws 1945, p. 164, Par. 5.

Par. 286.6. OBJECTION TO CREATION OF UNIT.—If at any time after the filing of a petition for the creation of a unit and within sixty (60) days after the entry of an order by the Commission approving the creation of the same, lessees of record of fifteen percent (15%) or more of the proposed unit area, if prior to the entry of the order by the Commission, or lessees of record of fifteen percent (15%) or more of the unit area as defined by the approved plan of unitization and order of the Commission, if after the entry of such order, shall file written protest with the Commission against the creation of the unit, the Commission shall vacate all action of any kind theretofore taken and dismiss the proceedings for the creation of such unit. The fact that a lessee joined in the petition seeking authority to create the unit or otherwise participated in any of the steps thereafter taken with the view of creating the same, shall not preclude such lessee from filing a protest pursuant to the provisions of this Section. Laws 1945, p. 165, Par. 6.

Par. 286.7. PROCEDURE AND APPEAL.—Except as otherwise herein expressly provided, all proceedings had under this Act[1] including the filing of petitions, the giving of notices, the conduct of hearings and other action taken by the Commission shall be in the form and manner and in accordance with the procedure and procedural requirements provided in Sections 84 to 135, inclusive, Title 52, Oklahoma Statutes, 1941, or any amendment thereof with reference to proceedings thereunder. Such additional notice shall be given as may be required by the Commission. The Conservation Officer, his assistant and deputies and the Conservation Attorney shall act without additional compensation as technical advisors to the Commission to the extent that the Commission may require. Any person aggrieved by any order of the Commission made pursuant to this Act may appeal therefrom to the Supreme Court of the State of Oklahoma upon the same conditions, within the same time and in the same manner as is provided in said Sections 84 to 135, inclusive, Title 52, Oklahoma Statutes, 1941, for the taking of appeals from the orders of the Commission made thereunder, except in any such appeal the Commission shall be impartial, inactive and shall not be represented directly or indirectly by the Conservation Attorney, the Attorney General or any other public official or person. The Supreme Court on appeal shall have jurisdiction and authority and it shall be its duty to review the record of proceedings and transcript of evidence and to consider the validity of the order of the Commission appealed therefrom. On appeal the order of the Commission appealed from shall be regarded as prima facie valid, fair, reasonable and equitable, but if the order is found to be contrary to the clear weight of the evidence, in any one of such respects, the same shall be vacated and set aside and the cause referred to the Commission for further proceedings not inconsistent with the judgment of the court; otherwise the said order shall be affirmed.

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[1]Sections 286.1-286.17 of this title.

In addition to any other remedy provided in this Act any interested person, firm or corporation within a unit area feeling himself aggrieved by any order of the Commission or the action of a unit thereunder, may at any time institute a suit in the District Court of the County in which the greater part of the unit area is located, as in other civil suits in equity, against the other lessees within the unit and in such suit have his rights and equities determined. Any person aggrieved by the judgment entered in such an action may appeal therefrom to the Supreme Court of the State of Oklahoma in the time and manner as appeals are taken in other civil actions. To the extent possible under existing laws the Supreme Court shall give precedence to all such appeals in the hearing and disposition thereof. Laws 1945, p. 165, Par. 7.

Par. 286.8. OPERATIONS IN VIOLATION OF PLAN OF UNITIZATION UNLAWFUL.—From and after the effective date of an order of the Commission approving the creation of a unit and approving the plan of unitization applicable thereto the drilling of any well into or the operation of any well producing from the common source of supply or portion thereof within the unit area defined in the order by persons other than the unit or persons acting under its authority or except in the manner and to the extent provided in such plan of unitization shall be unlawful and is hereby prohibited. Laws 1945, p. 166, Par. 8.

Par. 286.9. THE NATURE, PURPOSES AND FUNCTIONS OF UNITS, AND LIABILITY OF OWNERS OF OIL AND GAS RIGHTS THEREIN FOR UNIT EXPENSE.—Each unit created under the provisions of this Act[1] shall be a body politic and corporate, capable of suing, being sued and contracting as such in its own name. Each such unit shall be authorized on behalf and for the account of all the owners of the oil and gas rights within the unit area, without profit to the unit, to supervise, manage and conduct the further development and operations for the production of oil and gas from

[1]Sections 286.1-286.17 of this title.

the unit area, pursuant to the powers conferred, and subject to the limitations imposed by the provisions of this Act and by the plan of unitization.

The obligation or liability of the lessee or other owners of the oil and gas rights in the several separately-owned tracts for the payment of unit expense shall at all times be several and not joint or collective and in no event shall a lessee or other owner of the oil and gas rights in the separately-owned tract be chargeable with, obligated or liable, directly or indirectly, for more than the amount apportioned, assessed or otherwise charged to his interest in such separately-owned tract pursuant to the plan of unitization and then only to the extent of the lien provided for in this Act.

Subject to such reasonable limitations as may be set out in the plan of unitization, the unit shall have a first and prior lien upon the lease-hold interest only in the unitized common source of supply (exclusive of a one-eighth (⅛) royalty interest) in and to each separately-owned tract, the interest of the owners thereof in and to the unit production and all equipment in the possession of the unit, to secure the payment of the amount of the unit expense charged to and assessed against such separately-owned tract. The interest of the lessee or other persons who by lease, contract or otherwise are obligated or responsible for the cost and expense of developing and operating a separately-owned tract for oil and gas in the absence of unitization shall, however, be primarily responsible for and charged with any assessment for unit expense made against such tract and resort may be had to overriding royalties, oil and gas payments, royalty interests in excess of a one-eighth (⅛) of the production, or other interests which otherwise are not chargeable with such cost, only in the event the owner of the interest primarily responsible fails to pay such assessment or the production to the credit thereof is insufficient for that purpose. In the event the owner of any royalty interest, overriding royalty, oil and gas payment or other interest which

under the plan of unitization is not primarily responsible therefor pays in whole or in part the amount of an assessment for unit expense for the purpose of protecting such interest, or the amount of the assessment in whole or in part is deducted from the unit production to the credit of such interest, the owner thereof shall to the extent of such payment or deduction be subrogated to all of the rights of the unit with respect to the interest or interests primarily responsible for such assessment. A one-eighth (⅛) part of the unit production allocated to each separately-owned tract shall in all events be regarded as royalty to be distributed to and among, or the proceeds thereof paid to, the royalty owners free and clear of all unit expense and free of any lien therefor. Laws 1945, p. 166, Par. 9.

Par. 286.10. Property and Contract Rights.—Property rights, leases and other contracts, and all rights and obligations shall meet the provisions and requirements of this Act[1] and to any valid and applicable plan of unitization or order of the Commission made and adopted pursuant hereto, but otherwise to remain in full force and effect.

Nothing contained in this Act shall be construed to require a transfer to or vesting in the unit of title to the separatey-owned tracts or leases thereon within the unit area, other than the right to use and operate the same to the extent set out in the plan of unitization; nor shall the unit be regarded as owning the unit production. The unit production and the proceeds from the sale thereof shall be owned by the several persons to whom the same is allocated under the plan of unitization. All property, whether real or personal, which the unit may in any way acquire, hold or possess shall not be acquired, held or possessed by the unit for its own account but shall be so acquired, held and possessed by the unit for the account and as agent of the several lessees and shall be the property of such lessees as their interests may appear under the plan of unitization, subject, however, to the right of

[1]Sections 286.1-286.17 of this title.

the unit to the possession, management, use or disposal of the same in the proper conduct of its affairs, and subject to any lien the unit may have thereon to secure the payment of unit expense.

The amount of the unit production allocated to each separately-owned tract within the unit, and only that amount, regardless of the well or wells in the unit area from which it may be produced, and regardless of whether it be more or less than the amount of the production from the well or wells, if any, on any such separately-owned tract, shall for all intents, uses, and purposes be regarded and considered as production from such separately-owned tract, and, except as may be otherwise authorized in this Act, or in the plan of unitization approved by the Commission, shall be distributed among or the proceeds thereof paid to the several persons entitled to share in the production for[2] such separately-owned tract in the same manner, in the same proportions, and upon the same conditions that they would have participated and shared in the production or proceeds thereof from such separately-owned tract had not said unit been organized, and with the same legal force and effect. If adequate provisions are made for the receipt thereof, the share of the unit production allocated to each separately-owned tract shall be delivered in kind to the persons entitled thereto by virtue of ownership of oil and gas rights therein or by purchase from such owners subject to the right of the unit to withhold and sell the same in payment of unit expense pursuant to the plan of unitization, and subject further to the call of the unit on such portions of the gas for operating purposes as may be provided in the plan of unitization.

Operations carried on under and in accordance with the plan of unitization shall be regarded and considered as a fulfillment of and compliance with all of the provisions, covenants, and conditions, express or implied, of the several oil and gas mining leases upon lands included within the unit area, or other contracts pertaining to the develop-

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[2]Probably should read "from".

ment thereof, insofar as said leases or other contracts may relate to the common source of supply or portion thereof included in the unit area. Wells drilled or operated on any part of the unit area no matter where located shall for all purposes be regarded as wells drilled on each separately-owned tract within such unit area. Laws 1945, p. 167, Par. 10.

Par. 286.11. AMENDMENTS TO PLAN OF UNITIZATION.—In any proceeding hereunder in which an order is entered creating a unit, the Commission shall retain jurisdiction thereof and of all parties in interest for the purpose of amending the plan of unitization from time to time whenever by reason of changed conditions or otherwise for good cause shown it is made to appear that such amendment is necessary or proper. Such an amendment may be made only upon the petition of lessees of record of ten percent (10%) or more of the unit area. Any amendment to a plan of unitization made pursuant hereto shall be effective prospectively only from and after the date on which the order providing for such amendment shall become final. The procedure for any such amendment including the filing of a petition, the giving of notice and conduct of the hearing shall be the same as that required for the creation of a unit and the adoption of a plan of unitization in the first instance, insofar as applicable. Laws 1945, p. 168, Par. 11.

Par. 286.12. ENLARGEMENT OF UNITS.—The unit area of a unit may be unitized with adjoining and contiguous portions of the same common source of supply including the unit area of another or other units, and a unit created for the unitized management, operation and further development of such enlarged unit area upon the filing of a petition therefor and after notice and hearing, in the same manner, on the same conditions, but subject to the right of lessees of record of fifteen percent (15%) or more of an existing unit area to protest, and veto such enlargement or merger, all as herein provided with respect to the creation of a unit in the first instance. Upon the creation

of a larger unit embracing the unit area of one or more smaller units, the larger unit so created shall thereupon supersede such smaller unit or units. Laws 1945, p. 169, Par. 12.

Par. 286.13. PUBLIC LANDS.—The Commissioners of the Land Office, or other proper board or officer of the State having the control and management of State land, and the proper board or officer of any political, municipal, or other subdivision or agency of the State, are hereby authorized and shall have the power on behalf of the State or of such political, municipal, or other subdivision or agency thereof, with respect to land or oil and gas rights subject to the control and management of such respective body, board, or officer, to consent to or participate in any plan or program of unitization adopted pursuant to this Act.[1] Laws 1945, p. 169, Par. 13.

Par. 286.14. NO INCOME OR PROFIT SUBJECT TO TAXATION. —Neither the unit production or proceeds from the sale thereof, nor other receipts shall be treated, regarded, or taxed as income or profits of the unit; but instead, all such receipts shall be the income of the several persons to whom or to whose credit the same are payable under the plan of unitization. To the extent the unit may receive or disburse said receipts it shall only do so as a common administrative agent of the persons to whom the same are payable. Laws 1945, p. 169, Par. 14.

Par. 286.15. DEFINITIONS.—For the purposes of this Act,[1] unless the context otherwise requires:

(a) The term "lessee" refers not only to lessees under oil and gas leases but also to the owners of unleased lands or mineral rights having the right to develop the same for oil and gas.

(b) Any reference to a separately-owned tract, although in general terms broad enough to include the surface and all underlying common sources of supply of oil and gas

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[1]Sections 286.1-286.17 of this title.

shall have reference thereto only in relation to the common source of supply or portion thereof embraced within the unit area of a particular unit.

(c) The phrase "oil and gas" shall refer not only to oil and gas as such in combination one with the other, but shall have general reference to oil, gas, casinghead gas, casinghead gasoline, gas-distillate, or other hydrocarbons, or any combination or combinations thereof, which may be found in or produced from a common source of supply of oil, oil and gas or gas-distillate.

(d) The term "person" shall mean and include any individual, corporation, partnership, common law or statutory trust, association of any kind, the State of Oklahoma or any subdivision or agency thereof acting in a proprietary capacity, guardian, executor, administrator, fiduciary of any kind, or any other entity or being capable of owning an interest in and to a common source of supply of oil and gas.

(*d*) The term "unit expense" shall include and mean any and-all cost, expense, or indebtedness incurred by the unit in the establishment of its organization, or incurred in the conduct and management of its affairs or the operations carried on by it, authorized by the approved plan of unitization. Laws 1945, p. 169, Par. 15.

Par. 286.16. CONSTRUCTION OF ACT.—The provisions of this Act[1] are declared to be severable, and, if any section, sentence, clause or part thereof be held invalid or unconstitutional for any reason, such invalidity or unconstitutionality shall not be construed to affect the validity of the remaining provisions of this Act. Laws 1945, p. 170, Par. 16.

Par. 286.17. UNITIZATION AGREEMENTS NOT VIOLATIVE OF ANTI-TRUST LAWS OR IN RESTRAINT OF TRADE.—No agreement between or among lessees or other owners of oil and gas rights in oil and gas properties, entered into pursuant hereto or with a view or for the purpose of bringing

[1]Sections 286.1-286.17 of this title.

about the unitized development or operation of such properties, shall be held to violate any of the statutes of this State prohibiting monopolies or acts, arrangements, agreements, contracts, combinations or conspiracies in restraint of trade or commerce. Laws 1945, p. 170, Par. 17.

APPENDIX "B"

ORDER No. 20289 OF THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA.

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

Cause CD No. 1308 Order No. 20289

IN THE MATTER OF THE PETITION FOR THE CREATION OF THE WEST CEMENT MEDRANO UNIT HAVING FOR ITS PURPOSE THE UNITIZED MANAGEMENT, OPERATION AND FURTHER DEVELOPMENT OF THE WEST CEMENT MEDRANO COMMON SOURCE OF SUPPLY OF OIL AND GAS IN CADDO COUNTY, OKLAHOMA, THE DEFINING OF THE UNIT AREA THEREOF AND THE PRESCRIBING OF THE PLAN OF UNITIZATION APPLICABLE TO SUCH UNIT AND UNIT AREA.

REPORT AND ORDER OF THE COMMISSION

The above styled and numbered cause is a proceeding brought by the lessees of a substantial majority of the acreage in the West Cement Medrano oil and gas pool or field located in Caddo County, Oklahoma, seeking to unitize the management, operation and further development of said field for the purpose of preventing the waste of oil and gas and of substantially increasing the ultimate recovery of oil therefrom, all as authorized and provided for in H. B. 339 of the 1945 Oklahoma Legislature. The bringing of this proceeding followed months of cooperative study of the field and of the benefits of unitization en-

gaged in by substantially all of the operating lessees in the pool and in which all were invited to participate. The original petition herein, attached to which was a recommended Plan of Unitization applicable to said field, was filed October 23, 1946.

Pursuant to order of the Commission, said petition was first set for hearing November 7, 1946, at 10:00 o'clock, A. M., in the Commission Courtroom in the State Capitol Office Building at Oklahoma City, Oklahoma, and notice thereof published once a week for two consecutive weeks in a newspaper of general circulation in Caddo County, in which West Cement Medrano field is located, and for the same time in a newspaper of general circulation in Oklahoma County, Oklahoma.

At the time and place so fixed for said hearing, a large number of persons were present, not only lessees but also land owners, royalty owners and other persons having varying interests in the West Cement Medrano Field. A group of lessors and royalty owners, represented by their attorney, Reford Bond, Jr., advised the Commission that they had not had sufficient time within which to study the proposed Plan of Unitization and requested a continuance of the hearing. The granting of the continuance was agreed to by the petitioners who, through their attorneys, publicly announced that during the period of the continuance they stood ready and willing, upon request, to furnish any party in interest any factual data pertaining to the West Cement Medrano field and the proposed Plan of Unitization available to petitioners. At the same time Magnolia Petroleum Company, an operating lessee in the field, asked leave to sign the petition as one of the petitioners thereto. Whereupon, the Commission continued said hearing to December 9, 1946, at 10:00 o clock A. M. at the same place, permitted the Magnolia Petroleum Company to sign the petition as one of the petitioners, directed that the petition be refiled and ordered that notice of the refiling of the petition and of the date to which said hearing was continued be published in the same manner and

for the same time as was the first notice of hearing, all of which was done.

In advance of said original hearing date, as is its usual custom in oil and gas matters, the Commission mailed mimeographed copies of the petition, together with information as to the time of hearing, to all persons on its established mailing list, which includes all operating lessees within the West Cement Medrano field as well as a number of royalty and other interest owners.

The hearing of said cause was commenced at the time and place so fixed, namely, December 9, 1946, at 10:00 o'clock A. M., in the Commission Courtroom in the Capitol Office Building in Oklahoma City, Oklahoma, and continued at the same place throughout all the following days, to wit: December 9 and 23, 1946; January 6 and 7; February 25, 26, 27 and 28; May 13, 14, 15, 16, 20, 21, 22 and 23; July 15, 16, 17, 18, 22, 23, 24 and 25; all in 1947, except for said first mentioned dates in 1946. The continuance of said hearing from time to time was by proper orders of continuance. At said hearing the petitioners and subscribers to the proposed Plan of Unitization were represented by the following named attorneys: W. H. Brown, Russell G. Lowe, Booth Kellough, W. R. Wallace and R. M. Williams. The protestant, the Palmer Oil Corporation appeared by its attorneys, Mark H. Adams and Charles Jones, of Wichita, Kansas. Protestants Tom Potter, Clyde Kahle, Maude Kahle, Bob White Oil and Gas Company and a group of approximately 65 lessors and royalty owners appeared by their attorney, Reford Bond, Jr. The protestants B. E. Johnson, Virginia McIntyre and M. L. McIntyre appeared by their attorney, Jack Page. A number of royalty and other interest owners wrote letters to the Commission urging the granting of the petition, all of which appear in the record. Other royalty owners and various parties in interest were present at the hearing from time to time but took no part.

At the hearing everyone who desired to do so, regardless of the interest of such person, was given full opportunity to offer any and all competent evidence that any

such person chose to offer, either for or against the recommended Plan of Unitization or by way of amendment thereto, and to otherwise be heard in regard thereto. The evidence so introduced consisted of extensive geological, engineering and other proof concerning the history, discovery, development, operation and present condition of the West Cement Medrano field and the probable results obtainable both under present competitive methods of operation and through the unitization thereof; proof both pro and con as to the fairness, reasonableness and equitableness of the recommended Plan of Unitization; and proof by protestants with respect to certain amendments which they claim should be made in said Plan.

In addition to the knowledge gained from the evidence introduced at said hearing, the Commission has had, over a period of time, a general knowledge of the West Cement Medrano field and of conditions existing therein gained through the exercise by it of its jurisdiction over such field under the Conservation Laws of the State of Oklahoma, dating from the discovery thereof. As a result of the evidence, statements and arguments introduced and made in the hearing here under consideration, and by reason of its general knowledge of said West Cement Medrano field, as aforesaid, the Commission is of the opinion that it has sufficient knowledge and information upon which to base a proper order in this cause.

In addition to the proceedings and notices aforesaid, further mention is here made of the fact that during the course of said hearing, The Palmer Oil Corporation drilled and completed an additional well on a lease owned by it in the aforesaid field, necessitating a relatively slight change in the percentage of interests of the several separately owned tracts in the field shown in "Exhibit B" attached to the recommended Plan of Unitization, and also necessitating the inclusion of such additional well in "Exhibit D" attached to said Plan of Unitization. Also as a result of the time consumed by the hearing, it was considered desirable by the petitioners and subscribers to the recommended Plan of Unitization to strike from

Section XXVII of said Plan the time limitation therein contained. To accomplish the aforesaid objectives, the petitioners during the course of the hearing asked and without objection were granted leave to amend the petition accordingly. In order to permit persons not present at the hearing an additional opportunity to be heard with respect to said amendment, the Commission set the petition as amended for further hearing on July 29, 1947, at 10:00 o'clock A. M., in the Commission Courtroom in the State Capitol Office Building at Oklahoma City, Oklahoma, and caused notice of the amendment to said petition and of the hearing thereon to be published, ten (10) days prior to said hearing date, in a newspaper of general circulation in Oklahoma County, Oklahoma. At the time and place so named, the further hearing was had in said cause upon the petition as amended, no one appearing, however, in opposition thereto.

Now, on this 5th day of September, 1947, the Commission having previously taken said cause under advisement and having considered the matter in conference and each of the Commissioners being well and fully advised, the Commission makes the following findings of fact, conclusions of law, and enters the following order authorizing and approving the creation of the West Cement Medrano Unit, defining of the Unit Area thereof and prescribing of the Plan of Unitization applicable to such Unit and Unit Area.

Findings of Fact and Conclusions of Law

The Commission finds:

1. That notice of the filing of the original petition, the refiling thereof after being signed by the Magnolia Petroleum Company, the filing of the amendment thereto and the time, place and purpose of the hearings on the petition, both as originally filed and as amended, was given in all respects as by law required, and that the Commission has jurisdiction of the subject matter of said petition and amended petition and of all persons interested therein,

and has jurisdiction to make and promulgate the hereinafter prescribed order.

2. That the lands (hereinafter designated and referred to as the "Unit Area") located in Caddo County, Oklahoma and outlined by the hatched line on the map marked "Exhibit A" and attached to the Plan of Unitization attached to and made a part of this order, are underlaid with an oil and gas-bearing formation known as the Medrano sandstone found at a depth ranging from approximately 4500 feet along the North and Northeast side of the Unit Area and an approximate depth of 6241 feet along the South and Southwest side of the Unit Area; that a gas cap exists along the high part of the producing formation from which the primary production is gas, whereas, the primary production from wells drilled lower on the structure is oil; that the average sand or formation thickness in the gas cap area or zone is approximately 65 feet; that the average sand or formation thickness in the oil area or zone is approximately 95 feet; that the said Medrano sandstone underlying said above described lands as aforesaid constitute a single common source of supply of oil and gas, all parts of which are permeably connected so as to permit the migration of oil or gas or both from one portion of said common source of supply to another wherever and whenever pressure differentials are created as a result of the production or operations for the production of oil or gas from said producing formation; that although faults are known to exist in parts of said common source of supply said faults do not prevent substantial migration of oil and gas and of pressures from one part of said common source of supply to another; that said common source of supply of oil and gas has heretofore been designated by the Commission and is generally known as the West Cement Medrano pool.

3. That said common source of supply of oil and gas was first discovered in October, 1936, by the drilling and completion of the Magnolia Petroleum Company's Medrano No. 6 gas well in the SE/4 of the NE/4 of the SW/4 of Section 36, Township 6 North, Range 10 West,

Caddo County, Oklahoma; that the presence of oil in said common source of supply of oil and gas was first discovered in March, 1943, by the drilling and completion of the Stephens Petroleum Company's Pierson No. 1 oil well in the SE/4 of the SW/4 of the SE/4 of Section 35, Township 6 North, Range 9 West, Caddo County, Oklahoma; that at the present time there are 37 oil wells and 19 gas wells producing from said common source of supply of oil and gas.

4. That the outer boundaries of said common source of supply of oil and gas underlying and by this Order included within the aforesaid Unit Area have been reasonably defined by actual drilling operations, both by the drilling of wells within and the drilling of wells outside said Unit Area; that said Unit Area consists of approximately 3700 acres of land.

5. That the lands embraced within the aforesaid Unit Area are divided into a large number of individual tracts of varying size and shape, and owned in severalty by a large number of different individuals, firms and corporations owning varying interests therein, including oil and gas leasehold interests, royalty interests and various and sundry other rights and interests; that the several oil and gas leases covering said lands are owned by not less than 25 different lessees; that the royalty interests under said land are divided among and owned by several hundred royalty owners; that the petitioners in this cause are lessees of record of 73.32% of the area of the common source of supply sought to be unitized; that the subscribers to the recommended Plan of Unitization and other lessees favoring its adoption are lessees of record of approximately 94% of the area of said common source of supply; that the lessees appearing at the hearing and protesting the granting of the petition herein are lessees of approximately 4% of the proposed Unit Area; that the lessees of the remaining percentage of the Unit Area have not appeared for or against the granting of the petition herein.

6. That without the unitization of said West Cement Medrano common source of supply of oil and gas the only method whereby said pool can be feasibly and effectively operated and produced for the recovery of oil and gas therefrom is by and under individual competitive pressure depletion methods of operation, the methods now being used in the pool, that is to say, by treating each separately owned tract or lease as a separate unit for operating and production purposes and depending on the natural energy in the producing formation to move what oil and gas can be moved thereby out of the formation to the well bore where it can be produced; that the principal natural energy mechanism in said pool is gas in solution with the oil coupled with a gas cap expansion; that under present competitive methods of operation, treating each tract or lease as a separate operating unit, there has been and still continues to be a disproportionate, inequitable and wasteful utilization and dissipation of the gas energy in the pool by certain tracts to the detriment and disadvantage of other tracts and to the injury of the pool as a whole; that by and under the best known competitive pressure depletion methods of operation not more than 25% or approximately 24 million barrels of the 97 million barrels of oil originally in place in the reservoir can be economically recovered, leaving the remaining 75%, or approximately 73 million barrels of oil in the ground unrecovered and unrecoverable except through and by means of unitization of the pool and the adoption of unitized methods of operation therein; that to permit the owners of gas wells and high gas-oil ratio wells to continue to produce such wells will result in robbing the oil wells of gas energy required to produce the oil; that to shut in the gas wells and the high gas-oil ratio wells without permitting the owners thereof to share in the oil and gas production from the oil wells, would deprive the owners of the gas wells of their fair share of the production from the pool; that the value of the recoverable oil exceeds many times the market value of the gas; that the return to the reservoir of the gas produced from the oil to supplement the remain-

ing natural gas energy and retard the decline in reservoir pressure and perhaps the injection at some later date of water low on structure is desirable and necessary to obtain the greatest ultimate recovery of oil from the pool, but which cannot be done in the absence of unitization because of the migratory nature of the injected gas or water and the effect that the injection thereof into the reservoir would have upon properties in the pool other than the property on which the gas or water is injected and upon the pool as a whole.

7. That by and through the unitization of the proposed Unit Area and the unitized management and operation and fur.her development thereof as a unit, all as set out and provided for in the Plan of Unitization hereto attached, full use can be made of the gas energy in the reservoir to the mutual advantage of all the owners of the said common source of supply of oil and gas, that waste of large volumes of oil and gas can be prevented, gas can and will be returned to the reservoir to supplement the natural reservoir energy, water encroachment, either natural or artificial, on the lower side of the pool can be properly controlled and utilized, substantially more oil, amounting to many millions of barrels, can be recovered from the common source of supply than can otherwise be recovered, a more equitable distribution of the recoverable oil and gas can be had as between the several owners of the pool and the correlative rights of the several owners can be more fully protected.

8. The unitization and unitized management and operation and further development of said common source of supply as a unit is reasonably necessary to effectively carry on the unitized methods of operation described in the proposed Plan of Unitization.

9. That any one or all of the unitized methods of operation described in the attached Plan of Unitization as applied to the common source of supply underlying and included within the Unit Area are feasible, will prevent waste, and will, with reasonable probability, result in the increased recovery of substantially more oil and gas from

the common source of supply than would otherwise be recovered; that the estimated additional cost of conducting such operations will not exceed the value of the additional oil and gas so recovered; that such unitization and the adoption of any one or more of such unitized methods of operation is for the common good and will result in the general advantage to the owners of the oil and gas rights in and to the common source of supply thereby affected.

10. That neither said West Cement Medrano common source of supply of oil and gas nor any part or parts thereof were being operated by or under pressure maintenance, repressuring or secondary recovery methods of operation as of the effective date of H. B. 339 of the 1945 Oklahoma Legislature.

11. That the Plan of Unitization attached to this order and which is made a part hereof, is one suited to the needs and requirements of the West Cement Medrano Unit, the creation of which is hereby authorized and approved, taking into account all the facts and conditions found by the Commission to exist in respect thereto; that said Plan of Unitization is fair, reasonable and equitable and contains all the terms, provisions, conditions and requirements reasonably necessary and proper to protect, safeguard and adjust the respective rights and obligations of the several persons affected, including royalty owners, owners of overriding royalty interests, oil and gas payments, carried interests, mortgagees, lien claimants, and others, as well as the lessees and such as will effectuate and accomplish the purposes of H. B. 339 of the 1945 Oklahoma Legislature; that said Plan of Unitization provides for the efficient unitized management and control of the further development and operation of the Unit Area for the recovery of oil and gas from the common source of supply affected; that the division of interests set forth in "Exhibit B" attached to said Plan of Unitization pursuant to which the unit production is to be apportioned and allocated among and to the several separately owned

tracts within the Unit Area is fair and equitable and is such as will reasonably permit persons otherwise entitled to share in or benefit by the production from such separately owned tracts to receive, in lieu thereof, their fair, equitable and reasonable share of the unit production or other benefits thereof; that the division of interest assigned to the several separately owned tracts in the Unit Area as set out in said "Exhibit B" to said Plan of Unitization is fair and reasonably representative of the value of said several tracts for oil and gas purposes and the contributing value thereof to the unit in relation to like values of other tracts in the unit; that the basis used to arrive at said division of interest takes into account the acreage of the several separately owned tracts, the quantity of oil and gas recoverable therefrom, the location thereof on structure, the probable productivity of oil and gas from such tracts in the absence of unitization, the burden of operation to which such tracts will or are likely to be subjected, together with all other pertinent engineering, geological and operating factors as are reasonably susceptible of determination; that the manner in which and the basis, terms and conditions on which the cost and expense of the further development and operation of the Unit Area shall be financed and apportioned among and assessed against the tracts and interests chargeable therewith are fair, reasonable and equitable; that the provisions of the said Plan with respect to taking over and using the wells, equipment and other properties of the several lessees within the Unit Area, including the method of arriving at the compensation therefor and otherwise proportionately equalizing and adjusting the investment of the several lessees in the project as of the effective date of the unit operations are fair, reasonable and equitable; that the provisions of said Plan with respect to the creation of an operating committee and the powers and duties of such committee are fair, reasonable and equitable.

12. That the Plan of Unitization hereto attached in all respects conforms to and complies with the requirements of H. B. 339 of the 1945 Oklahoma Legislature.

13. That the West Cement Medrano pool is a field within the meaning of that term as used in the second paragraph of Section 2 of H. B. 339 of the 1945 Oklahoma Legislature; that the term "field" in ordinary usage has no fixed or definite meaning but is sometimes used to refer to the general area where a number of oil or gas producing formations are found and at other times used to refer to a particular common source of supply or pool; that as used by the Legislature aforesaid, the term was intended to relate to the particular common source of supply or pool sought to be unitized under the Act and not to any general area which in a broader sense could be termed a field; that in effect said Act throughout relates to and deals only with single common sources of supply of oil and gas.

Order

It is therefore ordered by the Corporation Commission of the State of Oklahoma as follows:

1. That the petition filed herein be and the same is hereby granted.

2. That the creation of the West Cement Medrano Unit as prayed in said petition be and the same is hereby authorized and approved.

3. That the Unit Area of said unit shall extend to and include all of the West Cement Medrano common source of supply of oil and gas outlined by the hatched lines on the map marked "Exhibit A" attached to the Plan of Unitization attached to this order.

4. That the Plan of Unitization hereto attached and which by reference is made a part of this order is hereby approved and shall constitute the Plan of Unitization of and for said West Cement Medrano Unit and the Unit Area of said Unit, all to the same extent and with the same force and effect as if copied herein in its entirety.

5. Nothing herein contained shall be construed as a waiver by the Commission of any of its powers or authority over the West Cement Medrano Unit or the persons

comprising said unit, or the development and operation of the Unit Area thereof under the general oil and gas conservation laws of the State of Oklahoma, it being expressly recited that the Commission has and retains continuing jurisdiction over the operations carried on by the unit to the same extent that it would have jurisdiction over any other lessee or person producing oil and gas from the West Cement Medrano pool or field in the absence of unitization.

6. The Unit shall from time to time make such reports to the Commission concerning the operation by it of the Unit Area as may be requested by the Commission.

Done and performed by the Corporation Commission at its office in the Capitol Office Building, Oklahoma City, Oklahoma, this 5th day of September, 1947.

CORPORATION COMMISSION OF OKLAHOMA,

(Signed) REFORD BOND, *Chairman.*
(Signed) RAY O. WEEMS, *Vice-Chairman.*
(Signed) RAY C. JONES, *Commissioner.*

Attest:

(Signed) TOM MCMURRAY, *Secretary.*

(Seal)

APPENDIX "C"

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PLAN OF UNITIZATION OF WEST CEMENT MEDRANO UNIT

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PLAN OF UNITIZATION OF WEST CEMENT MEDRANO UNIT

Know all men by these presents:

The following shall constitute the Plan of Unitization applicable to the West Cement Medrano Unit created pursuant to authority of House Bill 339 of the 1945 Legislature of the State of Oklahoma and having for its purpose the unitized management, operation and further development of the Medrano Sand common source of supply of Oil and Gas underlying the lands outlined by the hatched line on the map hereto attached and marked "Exhibit A", all to the end that a greater ultimate recovery of Oil and Gas may be had therefrom, waste prevented and the correlative rights of the respective owners protected.

I

Definitions

As used in this Plan of Unitization, the following terms and expressions are defined as follows:

(a) "Unit" shall mean the West Cement Medrano Unit.

(b) "Commission" shall mean the Corporation Commission of the State of Oklahoma.

(c) "Person" shall mean any individual corporation, partnership, common law or statutory trust, association of any kind, the State of Oklahoma or any subdivision or agency thereof acting in a proprietary capacity, guardian, executor, administrator, fiduciary of any kind or any other entity capable of holding an interest in and to the Unit Area.

(d) The pronoun "it" is used to refer to any person regardless of gender.

(e) "Unit Production" shall mean and include all Oil and Gas produced from the Unit Area from and after the Effective Date hereof regardless of the well or tract within the Unit Area from which the same is produced.

(f) "Lessee" shall mean any owner, in whole or in part, of an Oil and Gas Lease or any unleased mineral interest, who alone or in association with another person or persons has the right, except for this Plan of Unitization, to explore, develop and operate a Separately Owned Tract for Oil and Gas and in so doing would be personally chargeable with a proportionate part of the cost and expense of the operation thereof. An owner of an overriding royalty interest, oil payment, carried interest, net profit contract, or other oil and gas rights of a similar nature, who is not personally chargeable with the cost and expense of operations, shall not be regarded as a Lessee.

(g) "Unit Operator" shall mean and refer to the Lessee designated to carry on and conduct the Unitized Operations within the Unit Area as provided in Section X hereof.

(h) "Oil and Gas" shall not only refer to oil and gas as such in combination one with the other, but shall have reference to oil, gas, casinghead gas, casinghead gasoline or other hydrocarbons, or any combination or combinations thereof, or any one thereof, which may be found in or produced from the Unit Area.

(i) "Oil and Gas Rights" shall mean and include the right to explore, develop and operate lands within the Unit Area for the production of Oil and Gas, to reduce the same to possession or to share in the production so obtained or the proceeds thereof.

(j) "Effective Date" shall mean the date on which the Unit assumes and takes over the operation of the Unit Area as is provided in Section IX hereof.

(k) "Unit Expense" shall include any and all cost, expense or indebtedness incurred by the Unit or Unit operator as authorized by this Plan of Unitization or the order of the Commission creating the Unit.

(l) "Unqualified Subscribers" shall mean and refer to those Lessees who sign this Plan of Unitization as Unqualified Subscribers as is provided for in Section XXVII hereof.

(m) "Qualified Subscribers" shall mean and refer to those Lessees who sign this Plan of Unitization as Qualified Subscribers as is provided for in Section XXVII hereof.

II

Name

The name of the Unit created hereby shall be West Cement Medrano Unit.

III

Unit Area

The Unit Area of the Unit shall extend to and include all of the Medrano Sand formation underlying the lands outlined by the hatched line on the map hereto attached, marked "Exhibit A" and made a part hereof, the same being a single common source of supply of Oil and Gas, located in Caddo County, Oklahoma.

IV

Separately Owned Tracts

Each tract of land within the Unit Area, which by virtue of the ownership thereof in fee, or by common ownership of the Oil and Gas Rights therein or by lease or other agreement among the owners thereof, is presently regarded as a single tract or leasehold estate for the purpose of Oil and Gas development and operation shall be defined, regarded and treated as a Separately Owned Tract within the purview and meaning of this Plan of Unitization. The Separately Owned Tracts as so defined and established are shown on the map hereto attached and marked "Exhibit A" and are for convenient identification numbered thereon and may be referred to by number.

V

General Powers of Unit

The Unit is authorized and empowered on behalf and for the account of all the Lessees within the Unit Area, without profit to the Unit, to supervise, manage and conduct the further development and operation of the Unit Area for the production of Oil and Gas, pursuant to the powers conferred and subject to the limitations imposed by the provisions of House Bill 339 of the 1945 Session of the Oklahoma Legislature and by this Plan of Unitization.

VI

Effect of Unitization

The adoption of this Plan of Unitization and the creation of the Unit as herein provided shall have the effect from and after the Effective Date hereof of unitizing all further development and operations for the production of Oil and Gas from the Unit Area and of pooling and unitizing the production so obtained, all to the same extent as if the Unit Area had been included in a single lease and all rights thereunder owned by the Lessees in undivided interests. Property rights, leases, contracts and all other rights and obligations in respect of the Oil and Gas Rights in and to the several Separately Owned Tracts within the Unit Area are hereby amended and modified to the extent necessary to make the same conform to the provisions and requirements of this Plan of Unitization, but otherwise to remain in full force and effect.

The relationship between the Lessees within the Unit Area, resulting from the creation of the Unit shall not be that of a trust, partnership or association but shall be in the nature of the tenancy in common.

Nothing herein contained shall be construed to require or result in a transfer to or the vesting in the Unit of title to the Separately Owned Tracts within the Unit Area or to the leases thereon, other than the right to use

and operate the same to the extent set out in this Plan of Unitization; nor shall the Unit be regarded as owning any of the Unit Production. The Unit Production and the proceeds from the sale thereof shall be owned by the several persons to whom the same is allocated under this Plan of Unitization. All property, real or personal, acquired, held or possessed for use in the operation of the Unit Area shall be the property of the Lessees as their interests may appear under this Plan of Unitization, subject, however, to the rights and powers herein granted the Unit and the Unit Operator.

The amount of the Unit Production allocated to each Separately Owned Tract and only that amount, regardless of the well or wells in the Unit Area from which it may be produced, and regardless of whether it be more or less than the amount of the production from the well or wells, if any, on any such Separately Owned Tract shall, for all intents, uses and purposes, be regarded and considered as production from such Separately Owned Tract.

Operations carried on, under and in accordance with this Plan of Unitization shall be regarded and considered as a fulfillment of and compliance with all the provisions, covenants and conditions, express or implied, of the several oil and gas mining leases upon lands included within the Unit Area, or other contracts pertaining to the development thereof, to the same extent that the development and operation of and the production of Oil and Gas from each of the several Separately Owned Tracts within the Unit Area would have constituted a fulfillment of and compliance with such leases and contracts. Wells drilled or operated on any part of the Unit Area, no matter where located, shall for all purposes be regarded as wells drilled on each Separately Owned Tract within the Unit Area.

VII

Allocation of Unit Production

All Unit Production, except so much thereof as is used in the development and operation of the Unit Area, including repressuring, pressure maintenance and other operations carried on in accordance with this Plan of Unitization, or is unavoidably lost, shall be apportioned among and allocated to the several Separately Owned Tracts within the Unit Area in accordance with the percentage and division of interest set forth and shown in Part I of "Exhibit B" hereto attached, subject, however, to the further provisions of Part II of said Exhibit.

Except as may be otherwise authorized or provided in this Plan of Unitization, the Unit Production allocated to each Separately Owned Tract shall be distributed among or the proceeds thereof paid to the several persons entitled to share in the production from such Separately Owned Tract in the same manner, in the same proportions, and upon the same conditions that they would have participated and shared in the production from such Separately Owned Tract, or the proceeds thereof, had not the Unit been organized, and with the same legal force and effect.

Except as may be otherwise authorized or provided in this Plan of Unitization, and provided adequate provisions are made for the receipt thereof, the share of the Unit Production allocated to each Separately Owned Tract shall be delivered in kind to the persons entitled thereto by virtue of ownership of Oil and Gas Rights therein or by purchase from such owners, subject, however, to the right of the Unit Operator to withhold and sell the same in payment of Unit Expense pursuant to this Plan of Unitization, and subject further to the right of the Unit Operator to take and use such portion of the Unit Production (including residue gas) as may be required for operating purposes, including repressuring, pressure maintenance and any other operation carried on, pursuant to this Plan of Unitization. Persons so entitled

to take and receive in kind any portion of the Unit Production shall have the right to construct, maintain and operate within the Unit Area all necessary facilities for that purpose, provided the same are so constructed, maintained and operated as not to interfere with the operations carried on pursuant hereto.

To the extent that any person entitled to take and receive in kind any portion of the Unit Production shall fail to take and receive the same currently as and when produced, the Unit Operator, as agent and for the account and at the expense of such person, is authorized to market and sell or itself purchase, at not less than the market price prevailing at the time of such sale or purchase, the portion of Unit Production not so taken in kind by the person entitled to take and receive the same. Proceeds of the Unit Production so sold, or purchased by the Unit Operator, shall be paid by the Unit Operator to the person or persons for whose account the same is so marketed.

The person or persons receiving in kind the Unit Production allocated to any Separately Owned Tract or receiving the proceeds of such Unit Production, if the same is marketed and sold, or purchased by the Unit Operator, shall be responsible for the payment of, and shall indemnify the Unit, the other Lessees and the Unit Operator against any liability for, any and all royalties, overriding royalties, production payments, gross production taxes and any and all other payments and taxes chargeable against or payable out of the Unit Production which is received in kind by, or the proceeds of which are paid to, such person or persons, and neither the Unit nor the Unit Operator shall have any responsibility or liability for payment of such royalties, overriding royalties, production payments, gross production taxes or the other payments or taxes.

If at any time the title or right of any person claiming the right to receive in kind all or any portion of the Unit Production allocated to a Separately Owned Tract is in

dispute or is disapproved by the Operating Committee, the Unit Operator shall at the direction of the Operating Committee either (a) withhold and market, or itself purchase the portion of the Unit Production, title to which is in dispute or is disapproved, and impound the proceeds thereof until such time as the title or right thereto is established, by final judgment of a court of competent jurisdiction or otherwise to the satisfaction of the Unit Operator, whereupon, the proceeds so impounded shall be paid, without interest, to the person or persons rightfully entitled thereto, or (b) may require that the person or persons to whom such Unit Production is delivered, or to whom the proceeds thereof are paid, furnish security for the proper accounting therefor to the rightful owner or owners in the event the title or right of such person or persons shall fail, in whole or in part.

The Unit Operator shall have the right to take and utilize so much of the Unit Production as may be necessary or desirable in the development and operation of the Unit Area, including but without being limited to, the use of gas (including residue gas) for repressuring, pressure maintenance or other operations carried on in accordance with this Plan of Unitization. No royalties, overriding royalties, production payments or other payments shall be payable upon or with respect to that portion of the Unit Production so taken and utilized by the Unit Operator or which may be lost in handling or otherwise without want of due diligence on the part of the Unit Operator.

VIII

Operating Committee

An Operating Committee is hereby created to consist of one representative to be designated by each Lessee within the Unit Area, provided that an individual Lessee may himself be a member of the Committee. Such designation shall be in writing and with respect to the representative to participate at the organization meeting of the

Committee shall be presented at such meeting, or if thereafter made, shall be filed with the Secretary of the Operating Committee. Any such Lessee may in like manner (a) designate an alternate representative on the Operating Committee, who, in the absence of the Lessee or its regular representative, shall have the same full right and power to represent the interest of such Lessee, or (b) may from time to time discharge any such regular or alternate representative and designate a new representative to act for such Lessee on the Operating Committee.

The Operating Committee shall have the general overall management and control of the Unit and the conduct of its business and affairs and the operations carried on by it, and is authorized and empowered, subject to the terms and provisions hereof, to do all things necessary, proper and convenient for carrying out the terms and spirit of this Plan of Unitization and to that end, not excluding or limiting any other power or powers that may be necessary or proper for that purpose, shall have the following specific powers and duties:

(a) To adopt rules and regulations for the proper functioning of the Operating Committee, including such matters as the time and places of holding meetings, the calling thereof or the manner of taking the vote on any question all in a manner not inconsistent with the express requirements of this Plan of Unitization.

(b) To remove any Unit Operator.

(c) To select a successor to any Unit Operator.

(d) To determine the extent of drilling operations and development to be carried on by the Unit Operator, including the approval or disapproval of the contemplated drilling, deepening, plugging back, reconditioning, abandonment or the use to be made of any well or wells.

(e) To pass upon and approve or disapprove all costs and estimates of costs and any proposed expenditure by the Unit Operator; provided, that the Committee may permit without prior approval by it the incurring of normal operating expense and any proposed expenditure by

the Unit Operator of not more than Five Thousand ($5,000.00) Dollars; and provided further that the approval by the Operating Committee of the drilling of any well or wells or carrying out any specific project of development or operation shall mean and include the approval of all necessary expenditures in drilling, completing and equipping such well or wells or carrying out such project.

(f) To determine from time to time the rate at which and the wells from which the Unit Production shall be produced in conformity with good engineering practices and any applicable conservation laws or regulations.

(g) To pass upon, approve or disapprove the purchase, sale or other disposal of materials and equipment by the Unit Operator otherwise than in the normal course of approved operations.

(h) To approve and authorize the purchase, construction, location, abandonment, sale or other disposal of any compressor plant, gasoline plant, tank batteries, salt water disposal system or other facilities serving the Unit Area.

(i) To determine the manner in which, the location at which and the extent to which gas can best and should be injected into the reservoir to accomplish the Plan of Operation set forth in Section XV hereof.

(j) To provide for the proper auditing of the accounts of the Unit Operator with respect to the operation and development of the Unit Area.

(k) To appoint such sub-committees as it may deem proper and requisite, as for example, an advisory committee, legal committee, engineering committee, plant committee, geological committee and tax committee to act under the authority and subject to the control of the Operating Committee consonant with the terms of this Plan of Unitization.

(l) To approve or disapprove any proposed plan of development or operation or amendment thereof required to be submitted to any regulatory body having jurisdiction of the subject matter thereof.

(m) To approve or disapprove any proposed expenditures for expert technical advice, including any extra services rendered by the Unit Operator's technical staff, not contemplated by the provisions of the accounting procedure hereto attached, marked "Exhibit C" and not covered by the overhead charges therein authorized, which overhead charges in said accounting procedure are intended to cover only normal lease development and lease operations.

(n) To direct and consult with the Unit Operator in all matters pertaining to the duties and functions of the Unit Operator.

(o) To provide for the finances in the manner herein provided for the carrying on of the Unit Operations hereunder.

Each Lessee within the Unit Area who is represented on the Operating Committee shall have a vote equal to the proportionate interest of said Lessee in the Unit determined as follows:

(a) In respect of each Separately Owned Tract, the Lessee or Lessees thereof shall have a vote equal to the percentage indicated opposite such Separately Owned Tract in Part I of "Exhibit B" hereto attached.

(b) Should there be more than one Lessee of a Separately Owned Tract, the vote in respect thereof shall be divided between such Lessees in proportion as such Lessees share in the Unit Expense chargeable to such tract.

(c) The vote of a Lessee having an interest in more than one Separately Owned Tract shall be the sum total of the votes of such Lessee in respect of all such tracts.

In all matters except the removal of a Unit Operator the vote on behalf of Lessees having at least 66⅔% of the total voting interest in the Unit shall control.

A Unit Operator may be removed only by the vote of at least 75% in interest of the Lessees other than such Unit Operator.

If at any time the voting interest of a Lessee should be such as to control the action taken by the Committee,

the vote of such Lessee shall not serve to carry or defeat action taken by the Committee unless such vote is supported by the vote of a majority in interest of the remaining Lessees.

Minutes shall be made of all meetings of the Operating Committee and kept as a part of the permanent records of the Unit. Such minutes need not be a verbatim record of all the proceedings, but shall show and reflect (a) the names of all members present at the meeting; (b) all motions and resolutions offered or acted upon, together with the result of such action; and (c) such other formal action as may be taken by the Committee. A copy of the minutes of each such meeting shall be mailed to each member of the Committee within a reasonable time after the meeting.

Notices or other communications addressed and sent to the Unit or to the Operating Committee by United States mail or telegraph in care of the Unit Operator shall be deemed to have been properly given to or served upon the Operating Committee. The Unit Operator shall promptly deliver all such notices or communications to the Chairman or Secretary of the Operating Committee.

IX

Organization of Unit and Effective Date of Plan

Subject to call by Lessees of record owning 50% or more in interest in and to the Unit as shown in Part I of "Exhibit B" hereto attached the representatives designated by the several Lessees to serve on the Operating Committee shall meet at some convenient place to perfect the organization of the Operating Committee. Such meeting may be held at any time after twenty (20) days from the date of the order of the Commission approving this Plan of Unitization. Notice of the time and place of said meeting shall be mailed at least ten (10) days prior thereto to all Lessees within the Unit Area whose names and addresses are known to the Lessees calling said meeting, as well as those Lessees who shall have within ten

(10) days from the date of said order notified the Secretary of the Commission in writing of their desire to be so notified of the meeting. Any Lessee within the Unit Area desiring notice of such meeting may file a statement of such desire with the Secretary of the Commission, giving its name and the address to which it desires the notice to be sent.

The Operating Committee shall organize by selecting a Chairman, a Vice-Chairman, a Secretary and such other officers as to the Committee may seem proper. The Chairman and Vice-Chairman shall be selected from among the members of the Operating Committee. The Secretary and other officers may or may not be members of the Committee. The Chairman shall preside at all meetings of the Operating Committee when he is present and shall be the Chief Executive Officer of the Unit. The Vice-Chairman shall perform all duties of the Chairman in the absence of the Chairman. The Secretary shall keep and maintain all the records of the Committee and shall also be Secretary of the Unit. Such officers shall serve at the will of the Operating Committee and perform such other duties as are delegated to them by the Operating Committee.

Upon completion of its organization, the Operating Committee shall proceed to make plans and preparations and take such steps as are necessary for the taking over of the unitized operations and further development of the Unit Area by the Unit, and shall in advance thereof fix the time when the Unit will take over such operation and development, and give the Lessees within the Unit Area reasonable notice thereof. The time so fixed shall not be less than sixty-one (61) days after the entry of the order of the Commission approving this Plan of Unitization nor more than three months after the time when said order shall have become final.

The time when the Unit takes over the operation and further development of the Unit Area shall be the Effective Date of this Plan of Unitization.

In the event the Unit shall fail to assume and take over the operation of the Unit Area on or before three (3) months after the time when the order of the Commission approving this Plan of Unitization shall have become final, then and in that event the Unit shall, without further action on the part of the Operating Committee or the Commission, be dissolved and all rights and obligations under this Plan of Unitization shall be at an end, except that any and all cost and expense incurred by the Unit incident to its organization or preparatory to the taking over of the operation of the Unit Area shall be borne and paid for by the Lessees whose representatives on the Operating Committee by their vote authorized the incurring of such expense, in proportion as the interest of each such Lessee in and to the Unit as set out in Part I of "Exhibit B" bears to the total interest of all such Lessees in and to the Unit as shown on said Part I of "Exhibit B." In the event the Unit assumes and takes over the operation of the Unit Area within the time so named, this Plan of Unitization shall thereafter remain in force and effect until such time as the Unit is dissolved and abandoned as provided in Section XXV hereof."

The order of the Commission approving this Plan of Unitization shall be regarded as having become final at the end of the time allowed by law for any appeal therefrom, if no appeal is taken, or, if an appeal is taken, then upon the final determination of any such appeal.

The Unit on or before five (5) days after the Effective Date hereof shall submit to the County Clerk of Caddo County, Oklahoma, for filing, a written declaration signed by the Chairman and Secretary of the Operating Committee, setting forth

(a) The hour, day and year on which the Unit took over the operation of the Unit Area;

(b) A description or plat of the lands included within the Unit Area; and

(c) The cause number and date of the Commission order approving this Plan of Unitization, with an appro-

priate reference to such order and the files of the Commission for further information concerning this Plan of Unitization.

X

Unit Operator

Subject to the further provisions of this Plan of Unitization, operations in connection with the development and the operation of the Unit Area for Oil and Gas shall be carried on and conducted by a Unit Operator in accordance with the instructions of the Operating Committee.

The Unit Operator shall:

(a) Conduct all such operations in a good and workmanlike manner.

(b) Keep full, true and correct books, accounts and records of its operations hereunder which shall be made available for inspection at all reasonable times by any of the Lessees within the Unit Area.

(c) Mail to each Lessee on or before the 10th day of each calendar month a full, true and correct statement of all Unit Production during the preceding calendar month.

(d) Comply, to the extent of its operations within the Unit Area, with the Workmen's Compensation Laws of the State of Oklahoma and with all other valid and applicable federal and state laws and regulations.

(e) Carry such insurance as may be required by the Operating Committee.

(f) Keep the land and leases within the Unit Area free from liens and encumbrances occasioned by the operations of the Unit Operator save only the lien granted the Unit and the Unit Operator under this Plan of Unitization.

The Operating Committee may by the vote hereinbefore provided remove a Unit Operator at any time. A Unit Operator may resign only after giving the Operating Committee six months' written notice of its intention to resign, or sooner if a successor is selected and has assumed the duties of Unit Operator prior to the end

of such time. Upon the removal or resignation of a Unit Operator the Operating Committee shall designate a successor Unit Operator from among the Lessees within the Unit Area.

Phillips Petroleum Company is hereby designated as Unit Operator.

XI

Unit Expense

The Unit Operator in the first instance shall pay and discharge all cost and expense incurred in the development and operation of the Unit Area and in the conduct of the activities and affairs of the Unit. All such cost and expense incurred in the development and operation of the Unit Area shall be in accordance with the Accounting Procedure hereto attached, marked "Exhibit C" and made a part hereof. All other costs and expense shall be only such sums as are approved by the Operating Committee.

All such Unit Expense as it accrues shall be charged to the several Separately Owned Tracts in the Unit Area in proportion to the percentage of interest of such tracts in and to the Unit as set forth and shown in Part I of "Exhibit B" hereto attached.

Except as may be otherwise hereinafter specifically provided, a Lessee or Lessees obligated or responsible for the cost and expenses of operating a Separately Owned Tract for Oil and Gas in the absence of unitization shall, in the same proportion and to the same extent, be chargeable with and responsible for the payment of the Unit Expense charged against such Separately Owned Tract.

The Unit Operator shall on or before the last day of each calendar month render to each Lessee within the Unit Area an itemized statement of all charges and credits during the preceding month and of the amount due from or to each such Lessee with respect to each Separately Owned Tract. If the Unit Operator so elects, such state-

ment of account may also include a charge by way of an advance of the proportionate part of the estimated Unit Expense for the ensuing month chargeable to the Lessee against whom such statement is rendered, using as a basis therefor the budget hereinafter provided for. Except as may be otherwise provided herein, each Lessee chargeable with the payment thereof shall, within fifteen (15) days from the receipt of such statement, pay to the Unit Operator the amount thereof. If not paid when due, the unpaid balance shall bear interest at the rate of 6% per annum until paid. Payment of any such statement shall not prejudice the right of any Lessee to protest or question the correctness thereof; provided, the Unit Operator shall not be required to adjust any item of charge or credit unless a claim therefor has been presented in writing within six (6) months after the approval by the Operating Committee of the annual audit for the period in which the charge or credit was made.

Before or as soon as practical after the Effective Date hereof, the Operating Committee, acting in conjunction with the Unit Operator, shall prepare a budget of estimated Unit Expense for the remainder of the calendar year and on or before the first day of each December thereafter shall prepare a budget of estimated Unit Expense for the ensuing calendar year, which budgets shall set forth the estimated Unit Expense by quarterly periods. Unless otherwise specified in the budget, it shall be presumed for the purpose of advance billings as aforesaid, that the estimated Unit Expense for each month of a quarterly period shall be one-third (⅓) of the estimate for the quarterly period. Budgets so prepared shall be estimates only and shall be subject to adjustment and correction by the Operating Committee and Unit Operator from time to time whenever it shall appear that an adjustment or correction is proper. A copy of each such budget and adjusted budget shall be promptly furnished each Lessee within the Unit Area.

Any Lessee, other than an Unqualified Subscriber, who does not elect to pay its proportionate share of the Unit

Expense, shall not be personally obligated for the payment thereof, but the amount thereof or such portion thereof as such Lessee shall elect not to pay, together with interest thereon at the rate of 6% per annum, shall be carried and shall be payable, so far as such Lessee is concerned, as follows:

(a) So much of said charge as is made up of current operating costs, as distinguished from items of investment, together with interest thereon, shall be payable out of proceeds from all Unit Production to the credit of the interest or interests chargeable therewith.

(b) So much of said charge as is made up of items of investment, together with interest thereon, shall be payable out of 50% of the net proceeds of the Unit Production to the credit of the interest or interests chargeable therewith after deducting the charge for Operating costs under subparagraph (a) last above.

(c) All credits to any such Lessee on account of the sale or other disposal of surplus material or equipment or otherwise shall be applied against any such unpaid Unit Expense charged against such Lessee.

Amounts so carried as aforesaid, shall be billed to and paid by the Lessees who sign this Plan of Unitization as Unqualified Subscribers, in the proportion that the interest of each in the Unit bears to the total interests in the Unit of all of the Unqualified Subscribers to this Plan of Unitization, Lessees so paying the same shall be reimbursed therefor, together with interest thereon, as and when the amounts so carried and the interest thereon are collected from the Lessees or interests primarily chargeable therewith.

The Unit shall have a first and prior lien upon the leasehold interest (exclusive of a 1/8 royalty interest) in and to each Separately Owned Tract, the interest of the owners thereof in and to the Unit Production and all equipment in possession of the Unit, to secure the payment of the Unit Expense and other items of cost charged to and against such Separately Owned Tract, provided

such lien may be enforced as against overriding royalty, oil and gas payments, royalty interests in excess of a 1/8 of the production, or other interests which otherwise are not chargeable with such costs, only in the event the owner of the interest or interests primarily responsible fails to pay such Unit Expense when due, and the production to the credit thereof is insufficient for that purpose. In the event the owner of any royalty interest, overriding royalty, oil and gas payment or other interest which under the Plan of Unitization is not primarily responsible therefor pays any part of such Unit Expense for the purpose of protecting such interest or the amount of such Unit Expense in whole or in part is deducted from the Unit Production to the credit of such interest, the owner thereof shall, to the extent of such payment or deduction, be subrogated to all of the rights of the Unit and of the Unit Operator with respect to the interest or interests primarily chargeable with such Unit Expense. A one-eighth (1/8) part of the Unit Production allocated to each Separately Owned Tract shall in all events be regarded as royalty to be distributed to and among or the proceeds thereof paid to the royalty owners free and clear of all Unit Expense and free of any lien therefor. The lien hereinabove provided for shall be for the use, benefit and protection of Unit Operator or other Lessees or persons entitled to receive or share in the monies, the payment of which is secured thereby, and in the event of failure of the Unit to enforce such lien, the Unit Operator or other person entitled to the benefit thereof, shall be subrogated to the lien rights of the Unit, including the right of foreclosure.

In the event of a failure of any Lessee to pay its share of the Unit Expense when due, and also in the case of a Lessee who elects to be carried as aforesaid, the Unit Operator shall be entitled to take and market, or itself purchase the Unit Production to the credit of such Lessee or to the credit of the interest or interests chargeable with such Unit Expense, or to otherwise collect and re-

ceive the proceeds from the sale thereof, and shall apply all such sums so collected against the delinquent or unpaid Unit Expense due from such Lessee or interest, the balance of such proceeds, if any, to be paid to the Lessee or other person entitled thereto. The Unit Operator may likewise take any other credit due any such Lessee or interest and apply the same against sums due from such Lessee or interest for Unit Expense.

Any and all income and credits received by Unit Operator on account of Unit Operations hereunder, from whatever source received, shall currently be accounted for and credited to the Lessees or interests entitled to credit therefor.

XII

Initial Adjustment of Investment

Upon the Effective Date hereof the Unit shall assume control and management of the further development and operation of the Unit Area and, except as may be otherwise herein provided, each Lessee within the Unit Area shall deliver possession to the Unit Operator of (a) all wells within the Unit Area, (b) all lease and other operating equipment used in the operation of such wells, and (c) all production and well records and other pertinent data pertaining thereto.

(1) Completed Wells

All wells which as of the Effective Date are completed as producing wells in the Medrano Sand shall be taken over by the Unit, except that in the case of wells determined by the Operating Committee to be unnecessary to Unit operations, the owners thereof may upon request retain possession thereof for the purpose of completing the same in some other formation not a part of the Unit Area, provided, the owners thereof shall immediately cause the Medrano Sand to be sealed off in a manner satisfactory to the Operating Committee.

(2) Wells Being Drilled or Reconditioned

Any well being drilled, repaired, deepened or plugged back to the Medrano Sand as of the Effective Date hereof may be completed by the separate owner or owners thereof and if so completed as a producing well in the Medrano Sand, shall be taken over by the Unit except that in the case of wells determined by the Operating Committee to be unnecessary to Unit Operation, the possession thereof may be retained by the owners thereof under the circumstances and upon the conditions named in (1) last above.

(3) Casing, Tubing and Wellhead Connections

All casing, one string of tubing and wellhead connections in or on wells taken over by the Unit shall be treated and regarded as a part of such wells.

(4) Lease and Operating Equipment

As of the Effective Date hereof the Operating Committee shall determine what part of the lease and other operating equipment (exclusive of warehouses, lease houses, camps and office buildings) used in the operation of wells taken over by the Unit it considers necessary or desirable to take over and use in connection with the unitized development and operation of the Unit Area including, by way of example, but not thereby excluding, other equipment of a like or different kind, derricks, tank batteries, separators, rods, pumps, tubing in excess of one string, flow lines, water lines, gas lines, etc., which said lease and operating equipment (exclusive of warehouses, lease houses, camps and office buildings) shall be delivered to and taken over by the Unit. All lease and operating equipment not so taken over shall remain the separate property of the several owners thereof and may be used by said separate owners in the operation of wells producing from formations other than the Medrano Sand or reclaimed as such separate owners may desire. The acquisition of existing warehouses, lease houses, camps, or office buildings considered desirable to the operation and development of the Unit Area shall be by negotiation and sep-

arate contract of purchase with the owner or owners of such warehouses, lease houses, camps and office buildings.

(5) Adjustment of Well Investment -

(a) Each Separately Owned Tract on which is one or more wells taken over by the Unit shall be given credit for the value assigned to such well or wells as follows: wells listed in "Exhibit D" hereto attached shall have the assigned value therein shown; wells not listed in "Exhibit D" shall be assigned a value determined in the same manner as was used in determining the values assigned to the wells listed in "Exhibit D".

(b) Each Separately Owned Tract within the Unit Area shall thereupon be charged with the total value of all such wells in proportion to such tract's percentage of interest in and to the Unit as shown in Part I of "Exhibit B" hereto attached, less the amount of the credit due such tract under (a) last above, resulting in either a net debit or a net credit with respect to each Separately Owned Tract.

(c) The amount of any net debit chargeable against a Separately Owned Tract under (b) above shall be payable by the Lessee or Lessees of such tract out of 10% of 7/8 of the Unit Production of oil allocated to such tract if such tract has a credit under (a) above, or 25% of 7/8 of said oil if said tract has no credit under (a) above. The oil applicable to the oil payment with respect to each Separately Owned Tract having a net debit shall be sold by the Unit Operator, at not less than the prevailing market price, for the account of the Lessees of Separately Owned Tracts having net credits under (b) above until such time as the accumulated proceeds thereof equal the amount of such net debit. The Lessee or Lessees of each Separately Owned Tract having a net debit shall have the right to designate the purchaser to whom said oil shall be sold, provided the purchaser so designated will take and purchase said oil at the prevailing market price. Amounts collected by the Unit Operator under the provisions of this paragraph shall be paid by said Unit Operator to the

Lessees of Separately Owned Tracts having net credits under (b) above in proportion to the percentages which the net credit due each bears to the net credit due all such Lessees. The amounts of the debits and credits under (a) and (b) above in respect to Separately Owned Tracts held by the same Lessee may, at the option of such Lessee, be grouped for the purpose of arriving at a combined net debit for all such tracts payable out of such fraction of 7/8 of the Unit Production of oil allocated to all such tracts as will result in the application of the same amount of oil each month to the payment of said combined net debit as would have been applied to the payment of the separate net debits against said several tracts in the absence of such grouping.

(6) Accounting for Lease and Operating Equipment

An accounting for the lease and operating equipment so transferred to and taken over by the Unit shall be had as between the owners thereof, and all Lessees within the Unit Area on the basis of the value thereof determined in accordance with Section IV of the accounting procedure hereto attached marked "Exhibit C", plus a reasonable allowance for the cost of installation, if installed, to be determined by the Operating Committee, and proper charges and credits entered against the several Separately Owned Tracts, all to the end that on and after the Effective Date hereof each of the several Lessees within the Unit Area instead of separately owning the equipment delivered to the Unit by such Lessees, will have exchanged the same for an undivided interest in and to all the equipment so taken over and acquired by the Unit and will have paid or have been paid, as the case may be, for any difference in value. The amount of any net charge made against a Separately Owned Tract under this paragraph shall be treated and regarded in all respects the same as any other charge for Unit Expense chargeable to such tract.

XIII.

Oil in Lease Tankage as of Effective Date

A proper and timely gauge shall be made of all lease or other tanks taken over by the Unit to ascertain the amount of oil in such tanks at the time the Unit assumes and takes over the development and operation of the Unit Area. So much of such oil as is legally produced shall remain and be the property of the parties entitled thereto had not the Unit been created, and upon request, shall be delivered in kind to persons entitled thereto, or in the absence of such request, shall be sold by the Unit Operator for the credit of such persons at not less than the prevailing market price and the proceeds thereof paid to such persons.

XIV

Settlement with Respect to Gas Produced and Underproduction of Gas Prior to Effective Date

A settlement with respect to gas produced and underproduction of gas prior to the Effective Date shall be made as follows:

(a) Each Separately Owned Tract having underproduction to its credit as of the Effective Date shall be given credit for such underproduction, less so much thereof as may have accumulated between November 1, 1946, and the Effective Date, on the basis of 95% of what the Lessee or Lessees of each such tract would have received and been paid therefor, less seller's cost of dehydration, had said gas been produced and sold currently during the period or periods in which such underproduction accumulated.

(b) Each Separately Owned Tract shall be charged with the sales of gas from such tract during the four months' period from November 1, 1945, to March 1, 1946, plus any overproduction charged against such tract as of the Effective Date other than overproduction as may have accumulated during said four months' period, on the basis of 7/8 of 95% of the average price, less seller's cost of dehydra-

tion, received for gas sold from such tract during said four months' period from November 1, 1945 to March 1, 1946.

(c) Unit Operator shall pay to the Lessee or Lessees of each Separately Owned Tract having a net credit after deducting the amount of the charge under (b) from the credit under (a) the amount of such net credit.

(d) The Lessee or Lessees of each Separately Owned Tract against which there is a net charge after deducting the amount of the credit under (a) from the amount of the charge under (b) shall be charged with and shall pay to the Unit Operator the amount of said net charge in the same manner and on the same terms and conditions as if said net charge was a charge for Unit Expense against such Separately Owned Tract.

(e) If the amounts collected under (d) are less than the amounts paid under (c) the difference shall be charged against the several Separately Owned Tracts within the Unit Area in proportion to their respective percentages of interest as set out in Part I of Exhibit B hereof as an item of Unit Expense. If the amounts collected under (d) are more than the amount paid out under (c), the difference shall be credited to the several Separately Owned Tracts and paid to the Lessees thereof in proportion to the percentages of interest of such tracts as set out in Part I of Exhibit B hereof.

(f) The amounts credited to each Separately Owned Tract and paid to the Lessee or Lessees thereof under (c) and (e) shall be distributed and paid by such Lessee or Lessees to the owners of the Oil and Gas Rights in and to such tract, including the Royalty Owners, in the same proportion and to the same extent that they share in the Unit Production allocated to such tract as of the Effective Date hereof.

(g) The underproduction and overproduction of gas and the amount of sales of gas from any Separately Owned Tract at any time or during any period shall be determined from the books and records of the Commission.

XV

Plan of Operation

To the end that the quantity of Oil and Gas ultimately recoverable from the Unit Area may be substantially increased and waste prevented, the further development and operation of the Unit Area, from and after the Effective Date hereof, shall be conducted by the application to the Unit Area of the following unitized method of operation:

(a) As soon as practical after the Effective Date hereof, the Unit shall make the necessary preparations therefor and with diligence and in accordance with good engineering and production practices engage in pressure maintenance or repressuring operations through the return of gas to the reservoir to the extent and in the manner best calculated to efficiently and without waste result in the greatest ultimate recovery of Oil and Gas from the Unit Area. In so doing, the Unit is authorized to construct, purchase or otherwise acquire and operate such gasoline plants, processing plants or compressor plants and other facilities as may in the best judgment of the Operating Committee be desirable for that purpose, or is authorized, should it so elect, to contract with the owners of an individually owned plant or plants and facilities to render in whole or in part the desired services in connection therewith.

(b) The oil produced from the Unit Area shall be produced from those wells in the Unit Area from which the same can be obtained with the smallest loss or dissipation of reservoir energy reasonably possible under practical operating conditions as they may exist from time to time.

(c) Gas wells and wells which produce oil with gas-oil ratios found to be excessive in relation to the gas-oil ratios of other wells producing oil from the Unit Area shall be shut in or the production therefrom restricted in such manner as to make the most effective utilization of the gas energy of the reservoir reasonably possible under practical operating conditions as they may exist from time to time.

(d) Production of Oil and Gas from different parts of the Unit Area shall be regulated in such manner as to retard, control or effectively utilize water encroachment, in such manner and to such extent as may be found reasonably possible and economically advisable from time to time.

(e) Gas (other than gas produced in connection with the production of oil) shall be produced from the Unit Area only at such time or times and in such manner as in the judgment of the Operating Committee such gas may be produced without materially decreasing the quantity of oil economically recoverable from the Unit Area.

(f) Such other unitized method or methods of operation as may from time to time be determined by the Operating Committee to be feasible, necessary or desirable to efficiently and substantially increase the ultimate recovery of Oil and Gas from the Unit Area, provided the estimated additional cost thereof does not exceed the value of the additional Oil and Gas to be so recovered.

Nothing herein contained shall prevent the Unit from abandoning or changing in whole or in part any particular method or methods of operation, including the pressure maintenance or repressuring operations required under (a) above, if and in the event at such time, and to the extent that any such method of operation as applied to the Unit Area is, in the best judgment of the Operating Committee, no longer in accord with good engineering or production practices.

XVI

Right to Information Regarding Unit Operations

Each and all Lessees within the Unit Area shall have access to the entire Unit Area at all reasonable times to inspect and observe operations of every kind and character on the property, and shall have access at all reasonable times to any and all information pertaining to wells drilled, production secured, marketing of Unit Production and to the books, records and vouchers relating to the

operation of the Unit Area. Unit Operator shall, upon request, furnish to any such lessee tank tables, daily gauge and run tickets and reports of stock on hand at the first of each month and any other pertinent information pertaining to the Unit Area or development and operation thereof. All of the rights herein granted shall apply with equal force to the construction and operation by the Unit of any repressuring or pressure maintenance plant or other facilities in connection therewith.

XVII

Liability

No member of the Operating Committee or any other committee shall be personally liable or individually responsible for any act, error, default or omission as a member of such committee or committees.

Neither the Unit nor the Unit Operator shall be liable or responsible under any of the provisions of this Plan of Unitization for any acts or omissions resulting from causes beyond the control of the Unit or such Unit Operator, or other causes which by the exercise of due diligence could not have been prevented or overcome.

Unit Operator shall not be liable or responsible for any damage to the Unit Area or the property, equipment or facilities used in the development and operation thereof, or for the loss of any production arising out of its operation of the Unit Area, except only for bad faith or gross negligence in connection therewith.

If and in the event, notwithstanding the foregoing provisions of this section, the Unit, the Unit Operator or any member of the Operating Committee is held liable by a court of competent jurisdiction for any matter or thing for which it is herein provided the Unit or person so named shall not be liable, the amount of such liability as finally determined shall thereupon be treated, regarded and paid as an item of Unit Expense.

XVIII

Change of Interest

All transfers, assignments and conveyances of any interest in, or with respect to, any of the Separately Owned Tracts within the Unit Area shall be subject to the terms, provisions and conditions of this Plan of Unitization, but shall not be binding on the Unit or the Unit Operator unless and until a photostatic or certified copy of the recorded instrument evidencing such change of ownership has been delivered to the Unit Operator. Each such transfer, assignment or conveyance, whether so stating or not, shall operate to impose upon the person or persons acquiring such interest the obligation of the assignor or grantor with respect to the interest so transferred and shall likewise operate to give and grant to the person or persons acquiring such interest all benefit attributable hereunder to such interest.

XIX

Audits

The Operating Committee shall cause an audit to be made of the books, accounts and records of the Unit Operator in respect to matters pertaining to the Unit and the operation of the Unit Area at least once each year and shall furnish a copy thereof to each of the Lessees within the Unit Area. Each such audit shall cover the period intervening since the last audit. The audit may be made by an auditor or auditing committee from the accounting staff of one or more of the Lessees within the Unit Area, or by an independent auditor or auditors employed by the Unit to make such audit.

XX

Rights of Way

The Unit shall have a servitude and right of way on, over and across all of the lands in the Unit Area for the

purpose of laying, constructing, building, using and maintaining, operating, changing, repairing and removing pipe lines, tanks, telegraph and telephone lines, water lines, and other facilities for the development and operation of the Unit Area for Oil and Gas and for the gathering, handling and disposal of the Unit Production; provided, the Unit shall pay all damages to growing crops, timber, fences, improvements and structures on the land resulting from the exercise of the rights and privileges granted to it in this section.

XXI

Claims, Suits and Judgments Against Individual Owners of Unit Area

In the event claim is made against any of the owners of the Unit Area or any of such owners are sued on account of any matter or thing growing out of the development and operation of the Unit Area by the Unit and over which such owner or owners have no control because of the rights, powers and duties herein granted the Unit, said owner or owners shall immediately notify the Operating Committee in writing of such claim or suit. The Operating Committee shall assume and take over the further handling of such claim or suit and in pursuance thereof may select an attorney or attorneys for that purpose, who, subject to the directions of the Operating Committee, shall have the exclusive right to direct and control the settlement or defense thereof. Should such claim be settled, final judgment be entered against any such defendant or defendants upon said cause of action and any such defendant is required to pay or satisfy such judgment or expense of litigation in whole or in part, the amount of such settlement or judgment shall be treated, regarded and paid as any other item of Unit Expense. Nothing herein contained shall apply to or relieve any such owner or owners of liability which may have accrued prior to the effective date of this Plan of Unitization.

XXII

Title Information

Upon request of either the Operating Committee or the Unit Operator, the Lessees of the several Separately Owned Tracts shall furnish and make available to the Unit or the Unit Operator, as the case may be, an abstract brought to the date of the request, together with all other title information in the possession and files of such Lessees, title opinions, original or true copies of all leases, assignments, contracts, curative matter and all other data and information pertaining to or otherwise affecting titles to the Oil and Gas Rights in and to the Unit Area.

XXIII

Other Formations

It is understood that the common source of supply described herein as the Unit Area, namely, the Medrano Sand of the West Cement Field, underlies and may overlie other reservoirs or common sources of supply of Oil and Gas not a part of the aforesaid Medrano Sand or a part of the Unit Area of the Unit created hereby. Except as specifically provided in this Plan of Unitization, all rights of any and all persons in and to such other reservoirs or common sources of supply of Oil and Gas and the production therefrom, together with the right of ingress and egress and the use of the surface of the Unit Area for the exploration, development and operation of such other reservoirs or common sources of supply of Oil and Gas, are expressly reserved unto the separate owners thereof and shall remain unaffected by the creation of the Unit and the adoption of this Plan of Unitization, all to the same extent as if this Plan of Unitization had not been adopted except that in the exercise of such rights the owners thereof shall have due regard for the rights granted the Unit with respect to its operations hereunder. Likewise, any reference in this Plan of Unitization to a Separately Owned Tract or to the Unit Area, although in

general terms broad enough to include the surface and all underlying common sources of supply of Oil and Gas, shall have reference to the lands embraced within such Separately Owned Tract and within the Unit Area only in relation to the Medrano Sand of the West Cement Field.

XXIV

Abandonment of Wells

If the Operating Committee at any time desires to abandon any well completed in the Medrano Sand and salvage the casing and other equipment that is a part of the well, the Lessee or Lessees of the Separately Owned Tract on which such well is located shall be notified in writing of such decision and shall have and be granted thirty (30) days from receipt of such notice within which to elect to take over such well for the purpose of completing the same in some other formation not a part of the Unit Area. Any such Lessee electing to take over such a well shall pay the salvage value of the casing and other equipment in and on the well, determined in accordance with Section IV of the accounting procedure hereto attached marked "Exhibit C", and shall agree to assume full responsibility for the proper plugging and abandonment thereof at such time as the well is ultimately abandoned. No such well shall be operated or used for the production of Oil and Gas from the Unit Area and to that end the Lessee taking over such a well shall immediately cause the Medrano Sand in such well to be sealed off in a manner satisfactory to the Operating Committee. In the event the Lessee or Lessees of such a Separately Owned Tract do not elect to take over such well, the Unit Operator shall proceed to properly plug and abandon the same and salvage the casing and other equipment therefrom.

XXV

Abandonment of Operations and Dissolution of Unit

At such time as it is determined by the Operating Committee that Unit Production can no longer be produced

from the Unit Area in paying quantities the further development and operation of the Unit Area by the Unit shall be abandoned, the Unit dissolved and its affairs wound up.

Upon abandonment of Unit Operations,

(a) All rights in and to the several Separately Owned Tracts shall revert to the separate owners and Lessees thereof;

(b) The owner or Lessee of a Separately Owned Tract desiring to take over and continue to operate a well located on such Separately Owned Tract may do so by paying the salvage value of the casing and other equipment in and on the well determined in accordance with Section IV of the accounting procedure hereto attached marked "Exhibit C" and by agreeing to properly plug and abandon the well at such time as it is ultimately abandoned;

(c) With respect to all wells not taken over by the owner or Lessees of the Separately Owned Tracts as aforesaid, the Unit Operator shall salvage so much of the casing and other equipment therein as can economically and reasonably be salvaged and shall cause such well to be properly plugged and abandoned;

(d) The salvaging, liquidation or other distribution of assets and properties used in the operation of the Unit Area shall be in a manner determined by the Operating Committee; provided, any Lessee desiring to take its share of the physical assets or any portion thereof in kind may do so. All such assets and property shall belong to the several Lessees in proportion to their respective interests in the Unit.

At such time as the Unit Operations are abandoned and the affairs of the Unit wound up, the Unit shall submit for filing a declaration to that effect with the Secretary of the Corporation Commission and with the County Clerk of Caddo County, Oklahoma, whereupon the rights, powers and duties of the Unit shall be at an end.

XXVI

Amendment to Plan of Unitization and Enlargement of Unit

Any amendment of this Plan of Unitization or any enlargement of the Unit or Unit Area shall be in accordance with the provisions of Sections 11 and 12 of House Bill 339 of the 1945 Legislature of the State of Oklahoma or any amendment thereto.

XXVII

Subscribers

Provision is made below for the signing of this Plan of Unitization by Lessees within the Unit Area who wish to expressly signify their agreement to the terms, provisions and conditions hereof. Such Lessees may sign either as Unqualified or Qualified Subscribers. Those signing as Unqualified Subscribers agree to all the terms, provisions and conditions hereof, including the agreement to participate in carrying the Lessees who elect to be carried under the provisions of Section XI. Those signing as Qualified Subscribers agree to all the terms, provisions and conditions hereof, except that they reserve the right to be carried in respect to the payment of Unit Expense as is provided in Section XI and do not agree to participate in carrying the other Lessees who elect to be carried under the terms of said Section. This Plan of Unitization may be so signed by the subscribers hereto at any time, the original of which shall at all times from and after the approval hereof by the Commission remain on file in the office of the Secretary of the Commission. In lieu of signing the original of this Plan of Unitization, any Lessee desiring to subscribe hereto, either as an Unqualified or Qualified Subscriber, may do so by separate instrument filed with the Secretary of the Commission, all with the same effect as if such Lessees signed the original.

The signing hereof by any Lessee shall be binding upon the heirs, personal representatives, successors and assigns of such Lessees.

The signing hereof by each of the subscribers hereto is conditioned upon the approval of this Plan of Unitization by the Corporation Commission.

The signing hereof by the Unqualified Subscribers is further conditioned upon the signing hereof by Unqualified Subscribers who, under this Plan of Unitization based on present lease ownership, will own sixty-five per cent (65%) or more in interest in the Unit.

UNQUALIFIED SUBSCRIBERS:

AMERADA PETROLEUM CORPORATION

By_____

Attest:

_____

ANDERSON-PRICHARD OIL CORPORATION

By_____

Attest:

_____

CITIES SERVICE OIL COMPANY

By_____

Attest:

_____

FOSTER PETROLEUM CORPORATION

By_____

Attest:

_____

GULF OIL CORPORATION

By_____

Attest:

_____

MAGNOLIA PETROLEUM COMPANY

By_____

Attest:

_____

[Continued on p. 141]

PALMER OIL CORPORATION
By _____

Attest:
_____

PHILLIPS PETROLEUM COMPANY
By _____

Attest:
_____

RAY STEPHENS, INC.
By _____

Attest:
_____

STEPHENS PETROLEUM COMPANY
By _____

Attest:
_____

SUNRAY OIL CORPORATION
By _____

Attest:
_____

[Continued on p. 142]

QUALIFIED SUBSCRIBERS:

_____

By _____

Attest:

_____

_____

By _____

Attest:

_____

_____

By _____

Attest:

_____

_____

_____

_____

(Here follows 1 map, Exhibit A, fol. 144)

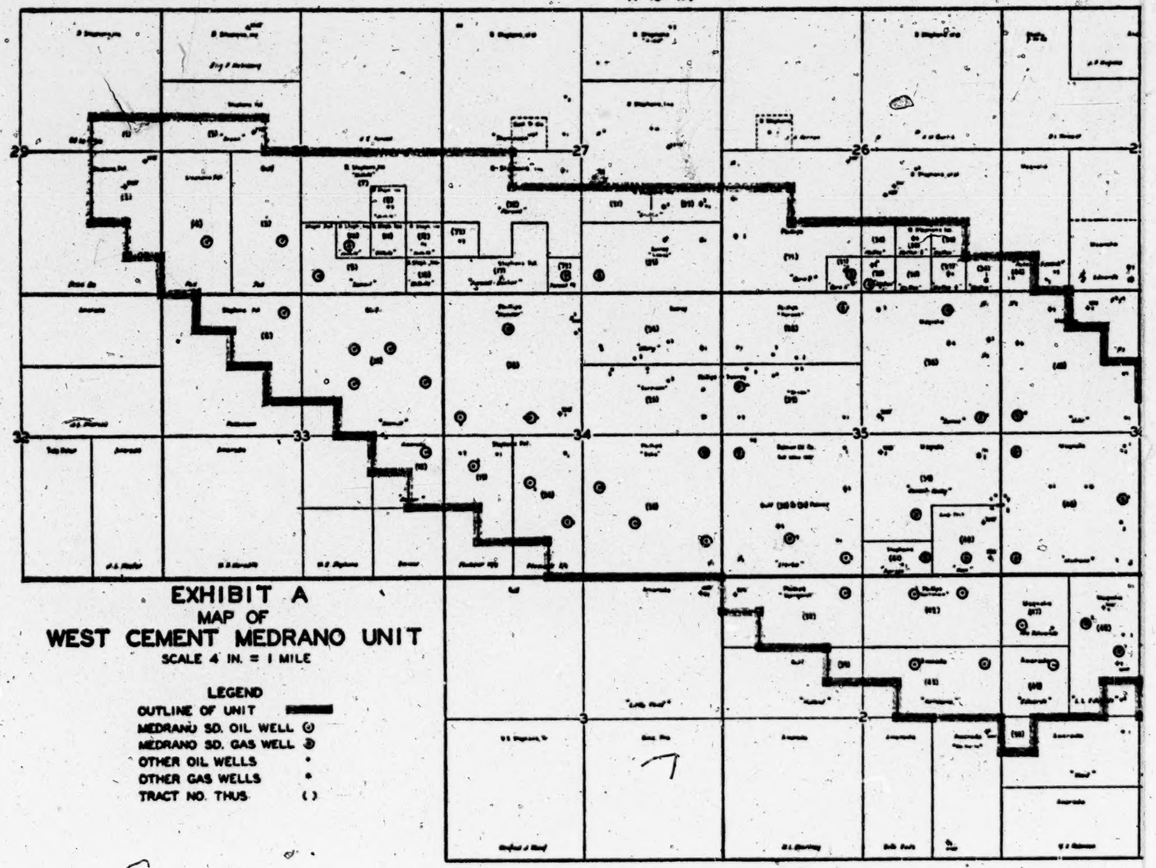


EXHIBIT A
MAP OF
WEST CEMENT MEDRANO UNIT
SCALE 4 IN. = 1 MILE

LEGEND
OUTLINE OF UNIT
MEDRANO SD. OIL WELL
MEDRANO SD. GAS WELL
OTHER OIL WELLS
OTHER GAS WELLS
TRACT NO. THUS ( )

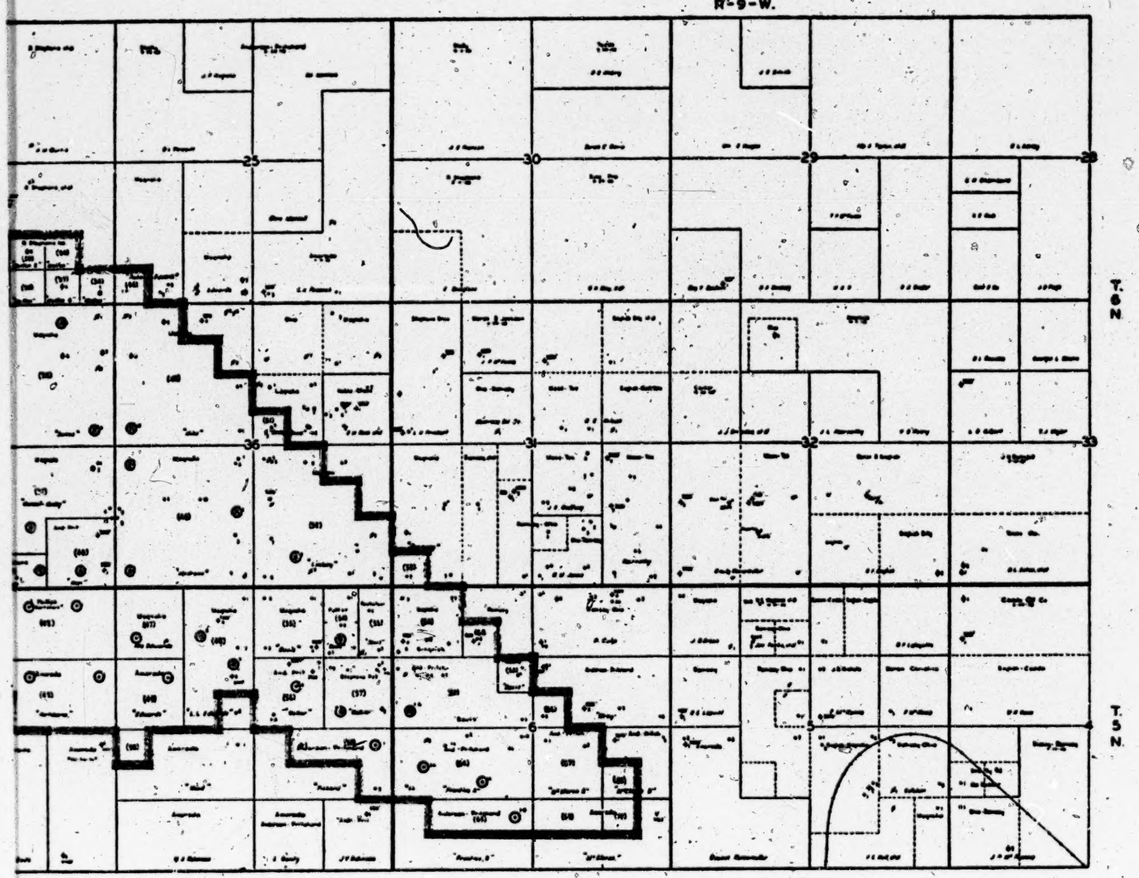


EXHIBIT "D"

Operator, Lease and Well	Tract Number	Assigned Value of Well
Amerada Petroleum Corporation		
Beemer #1	15	$59,038
Edwards #1	49	53,899
Hartshorn #1	43	57,995
Hartshorn #2	43	58,986
Anderson-Prichard Oil Corporation		
Davis #1-A	62	20,483
Hays #1	40	20,387
Pickard #1	58	51,198
Prentice "A" #3	64	52,240
Prentice "A" #4	64	50,924
Prentice "B" #1	65	53,686
Walker #2	56	52,168
Gulf Oil Corporation		
Pell #1	5	50,125
Sherritt #1	14	55,586
Sherritt #2	14	52,920
Sherritt #3	14	52,929
Sherritt #4	14	59,073
Magnolia Petroleum Company		
I. Edwards #2	47	54,085
L. L. Edwards #5	48	20,955
L. L. Edwards #7	48	20,869
Cement-Henley #5	39	20,185
Lindsay #12	52	17,323
Medrano #6	46	16,632
Medrano #7	46	14,993
Medrano #11	46	19,458
Niles #10	45	13,826
Sames #6	38	14,022
Sames #8	38	13,666
Palmer Oil Corporation		
Sterba #3	31	17,730
Sterba #4	31	55,064
Sterba #7	31	55,126
Phillips Petroleum Company		
Farwell #4	28	14,494
Fletcher #5	18	17,968
Fletcher #6	18	54,832
Fletcher #7	18	49,154
Garn "A" #5	27	14,188
Hartshorn #1	42	51,693
Hartshorn #2	42	54,989
Margaret #1	32	56,908
Oaks #1	26	18,186
Oaks #2	26	53,835
Oaks #3	26	55,329
Oaks #4	26	53,771
Potter		
Davis #1	54	19,032

EXHIBIT "D"—Continued

Operator, Lease and Well	Tract Number	Assigned Value of Well
Ray Stephens, Inc.		
Melton 1, #1	36	14,319
Wilhite #3	10	19,116
Farwell #2	16	15,812
Stephens Petroleum Company		
Pierson #1	41	21,797
Plummer W/2, #3	19	57,669
Plummer E/2, #4	20	56,107
Plummer E/2, #5	20	57,663
Pohleman #1	6	56,837
Samwill #1	9	50,090
Pell #1	4	56,625
Walker #1	57	57,834
Sunray Oil Corporation		
Dixon #1-A	29	16,376
Loose #3	23	15,376
Total		$2,165,571

EXHIBIT "B"

Part II

For the purpose of this exhibit:

(a) The following amounts of the Unit Production of Oil shall be regarded as *"Normal Production"* for the years shown opposite the amounts so named:

Year Following Effective Date	Daily Average in Barrels
1st year	5,225 Barrels
2nd year	5,075 "
3rd year	4,925 "
4th year	4,775 "
5th year	4,775 "
6th year	4,203 "
7th year	3,872 "
8th year	3,788 "

(b) All Unit Production of Oil in excess of said Normal Production shall be regarded as *"Excess Production"*.

(c) *"Time of Acceleration"* shall mean and include the time from the Effective Date to the end of five consecutive periods, each consisting of 12 calendar months, with the exception that any month shall not be counted as a month fixing the term of each such period if the Unit Production of Oil during such month is less than the Normal Production as a sole and direct consequence of a statewide proration order of the Corporation Commission. The five periods aforesaid shall be designated consecutively as Periods 1, 2, 3, 4 and 5.

(d) *"Time of Deceleration"* shall mean and include the time from the end of the Time of Acceleration and continuing until such time as the total number of additional barrels of Oil allocated to Separately Owned Tracts numbered 56, 57, 58, 64 and 65 during the Time of Acceleration as hereinafter provided, is offset by a like number of barrels of Oil allocated to the other Separately Owned Tracts during such Time of Deceleration, as hereinafter provided.

During the Time of Acceleration the Normal Production of Oil as hereinabove defined shall be allocated to all the several Separately Owned Tracts within the Unit Area in proportion to their respective percentages of interest shown in Part I of this Exhibit.

The Excess Production, if any, in any month during the Time of Acceleration and if sufficient for that purpose, shall be allocated to Separately Owned Tracts numbered 56, 57, 58, 64 and 65 in such amounts as to allocate to each such Separately Owned Tract the following amounts of Oil in excess of the number of barrels of Normal Production allocated to such Separatey Owned Tracts.

Number of Period	Percent in Excess of Normal
1	100%
2	75%
3	50%
4	25%
5	10%

If the Excess Production in any month during the Time of acceleration exceeds the amount required to satisfy the aforesaid increased allocations to the 5 Separately Owned Tracts last hereinabove named, the excess shall be allocated to all of the Several Separately Owned Tracts within the Unit Area in proportion to their respective percentages of interest as shown in Part I of this Exhibit.

If the Excess Production, if any, in any month during the Time of Acceleration is not sufficient to satisfy in full the aforesaid increased allocations to the 5 Separately Owned Tracts hereinabove named, then and in that event the amount of such Excess Production shall be allocated to said 5 Separately Owned Tracts in the proportion that the percentage of interest of each such tract bears to the sum of the percentages of interest of all of said 5 Tracts, as shown in Part I of this Exhibit.

During the Time of Deceleration the amount of the Unit Production of Oil allocated each month to the 5 Separately Owned Tracts hereinabove specifically named, shall be 50% of their respective percentages of interest as shown in Part I of this Exhibit, until such time as the total accumulated number of barrels of Oil so withheld from such tracts by reason of said 50% reduction in percentage shall exactly equal the total accumulated number of additional barrels of Oil allocated to said tracts by reason of the special increase in allocation granted such tracts during the Time of Acceleration as hereinabove provided. The Unit Production of Oil so withheld from said 5 Separately Owned Tracts hereinabove specifically named by reason of said 50% reduction in the percentage allocation to such tracts shall be allocated to the other Separately Owned Tracts in the Unit Area, exclusive of the 5 tracts hereinabove specifically named, in the proportion that the percentages of interest of each bears to the sum of the percentages of interest of all such other tracts, exclusive of the 5 specifically named tracts, as shown in Part I of this Exhibit.

After the End of the Time of Deceleration all Unit Production shall be allocated to all the several Separately

Owned Tracts within the Unit Area in proportion to their respective percentages of interest as shown in Part I of this Exhibit.

EXHIBIT "C"

Accounting Procedure

The term "joint property" as herein used shall be construed to mean the Unit Area covered by the Plan of Unitization to which this "Accounting Procedure" is attached, together with any processing or other plants and facilities used in the development and operation of such Unit Area.

The term "Operator" as herein used shall be construed to mean the Unit Operator designated to conduct the development and operation of the joint property for the joint account.

I—Development and Operating Charges

Subject to limitations hereinafter prescribed, Operator shall charge the joint account with the following items:

(1) Delay or other rentals, when such rentals are paid by Operator for the joint account.

(2) Labor, teaming and other services necessary for the development, maintenance and operation of the joint property.

(3) Materials, equipment and supplies purchased or furnished by Operator from its warehouse stocks or from its other leases for use on the joint property. Insofar as is practical and consistent with efficient and economical operation, only such materials shall be purchased for or transferred to the joint property as are required for immediate use, and the accumulation of warehouse or lease stock on the joint property shall be avoided.

(4) Moving materials to the joint property from vendor's or from Operator's warehouse in the district or from other properties of Operator, but in either of the last events no charge shall be made to the joint account

for a distance greater than the distance from the nearest reliable supply store or railway receiving point.

(5) Moving surplus materials from the joint property to outside vendees, if sold f. o. b. destination, or minor returns to Operator's warehouse or other storage point. No charge shall be made to the joint account for moving major surplus materials to Operator's warehouse or other storage point for a distance greater than the distance to the nearest reliable supply store or railway receiving point, except by authority of the Operating Committee; and no charge shall be made to the joint account for moving materials to other properties belonging to operator, except by authority of the Operating Committee.

(6) Use of and service by Operator's exclusively owned equipment and utilities as provided in Paragraph (6) of Section II: "Basis of Charges to Joint Account."

(7) Damages or losses incurred by fire, flood, storm or from any other cause not controllable by Operator through the exercise of reasonable diligence. Operator shall furnish the Operating Committee written notice of damages or losses incurred by fire, storm, flood or other natural or accidental causes as soon as practicable after report of the same has been received by Operator.

(8) Expenses of litigation, liens, judgments and liquidated claims involving the joint property or incident to its development and operation. Actual expenses incurred by Operator in securing evidence pertaining to the joint property shall be a proper charge against the joint account.

(a) When any case, by prior agreement, is handled by Operator's legal staff, thereby eliminating the retaining of outside counsel, a charge commensurate with the cost of services rendered may be made to the joint account. Charges of this nature shall not be rendered until the Operating Committee has approved the amount thereof.

(b) Fees and expenses of outside attorneys shall not be charged to the joint account except where the employ-

ment of such outside attorneys is authorized by the Operating Committee.

(9) All taxes paid for the benefit of the parties in interest including ad valorem, property, gross production, occupation and any other taxes assessed against the jointly-owned properties, the production therefrom or the operations thereon.

(10) Insurance:

(a) Premiums paid for insurance carried for the benefit of the joint account together with all expenditures incurred and paid in settlement of any and all losses, claims, damages, judgments and other expenses, including legal services, not recovered from insurance carrier.

(b) If no insurance is required to be carried, all actual expenditures incurred and paid by Operator in settlement of any and all losses, claims, damages, judgments and any other expenses, including legal services, shall be charged to the joint account.

(11) Overhead:

In lieu of any charge for the salaries and expense of officers and employees of Operator other than employees directly assigned to the operation of the joint property and employees performing special work pursuant to authority of the Operating Committee, and, in lieu of any charge for office and camp expense other than the expense of a field office or camp, if any, required for the operation of the joint property, the Operator shall have the right to charge the joint account with the following overhead charges:

(a) $150.00 per month for each drilling well, beginning on the date the well is spudded and terminating when it is on production or is plugged, as the case may be, except that no charge shall be made during suspension of drilling operations for fifteen (15) or more consecutive days.

(b) $50.00 per well per month for the first ten (10) producing wells.

(c) $40.00 per well per month for the second ten (10) producing wells.

(d) $25.00 per well per month for all producing wells over twenty (20).

(e) $20.00 per well per month for injection wells.

(f) An allowance to be agreed upon between the Operator and Operating Committee with respect to the construction and operation of any gas injection plant and facilities if and when the construction and operation thereof is authorized.

In connection with overhead charges, the status of wells shall be as follows:

(1) Producing gas wells shall be included in overhead schedule the same as producing oil wells.

(2) Wells permanently shut down but on which plugging operations are deferred, shall be dropped from overhead schedule at the time the shutdown is effected. When such wells are plugged, overhead shall be charged at the producing well rate during the time required for plugging operation.

(3) Wells being plugged back or drilled deeper shall be included in overhead schedule the same as drilling wells.

(4) If and when a well is temporarily shut down (other than for proration) and not produced or worked upon for a period of a full calendar month, it shall not be included on the overhead schedule for such month.

(5) Salt water disposal wells shall not be included in overhead schedule.

The above specific overhead rates are subject to adjustment and shall be amended from time to time by agreement between Operator and the Operating Committee if, in practice, they are found to be insufficient or excessive.

(12) Warehouse Handling Charges: None.

(13) Any other expenditures incurred by Operator for the necessary and proper development, maintenance, and operation of the joint property, except that Operator shall not charge the joint account with any expenditure or contribution made by Operator towards employes'

stock purchase plan, group life insurance, pension, retirement, or bonus, other than such expenditures or contributions imposed or assessed by governmental authority.

II—Basis of Charges to Joint Account

(1) Outside Purchases: All materials and equipment purchased and all service procured from outside sources shall be charged at their actual cost to Operator, after deducting any and all trade or cash discounts actually allowed off invoices, or received by Operator.

(2) New materials furnished by Operator (Condition "A"):

New materials transferred to the joint property from Operator's warehouse or other properties shall be priced f. o. b. the nearest supply store or railway receiving point at replacement cost of the same kind of materials. This will include large equipment such as tanks, rigs, pumps, boilers and engines. All tubular goods (2" or over) shall be charged on the basis of mill shipment or carload price. Other materials, where the replacement cost cannot be readily ascertained, may, for the purposes of consistency and convenience, be charged on the basis of a reputable supply company's preferential list price f. o. b nearest supply store or railway receiving point tc the joint property prevailing on the date of transfer of the materials to the joint property.

In determining the value of any transferred materials, all special and preferential discounts shall be allowed but the regular cash discount shall not be considered.

(3) Secondhand materials furnished by Operator (Conditions "B" and "C"):

(a) Tubular goods (2" and over), fittings, machinery and other equipment which is in sound and serviceable conditon at date of transfer, will be classed as condition "B" and charged at 75% of the price of new materials, in accordance with the provisions of Paragraph (2) above.

(b) Tanks, derricks, and buildings or other equipment

involving erection costs shall be charged on a basis not to exceed 75% of knocked-down new price for similar materials.

(c) Other secondhand materials, such as units of machinery or other equipment that is serviceable, but substantially not good enough to be considered first-class secondhand material when transferred to the joint property, shall be classed as condition "C" and charged at 50% of the new price.

(d) There may also be cases where some items of equipment, due to their unusual condition, should be fairly and equitably priced by Operator.

(4) Warranty of Materials Furnished by Operator: Operator does not warrant the materials furnished from its warehouse or other properties beyond or back of the dealers' or manufacturer's guaranty, and in case of defective materials, credits shall not be passed until adjustment has been received by Operator from the manufacturers or their agents.

(5) If materials required are not available in Operator's surplus stocks, Operator shall whenever in its judgment it is practical to do so, give to other lessees within the Unit Area opportunity of furnishing the materials required in proportion to their interest, provided that the same can be furnished at the time such materials are required, and further provided that any such materials so furnished shall be in condition acceptable to Operator and shall be charged to the joint account on the same terms and conditions as are provided herein to cover the furnishing of materials by Operator.

(6) Operator's Exclusively-owned Facilities: The following rates shall apply to service rendered to the joint property by facilities owned exclusively by Operator:

(a) Water service, gas, teaming, power, and compressor service: All at rates currently prevailing in the field where the joint property is located.

(b) Automotive Equipment: Rates commensurate with cost of ownership and operation and in line with schedule

of rates adopted by the Petroleum Motor Transport Association as recommended uniform standardized charges against the joint account. Automotive charges will be based on use in actual service on or in connection with the joint property. Truck, tractor and pulling unit rates shall include wages and expenses of driver.

(c) A fair rate shall be charged for the use of drilling and cleaning-out tools and any other items of Operator's fully-owned machinery or equipment which shall be ample to cover maintenance, repairs, depreciation and the service furnished the joint property. Provided, however, that such charges shall not exceed those currently prevailing in the field where the joint property is located.

(d) Whenever requested, Operator shall inform the other lessees within the Unit Area in advance of the rates it proposes to charge.

(e) Rates shall be revised and adjusted from time to time when found to be either excessive or insufficient.

III—Disposal of Lease Equipment and Materials

(1) Materials purchased by Operator shall be credited to the joint account and included in the monthly statement of operations for the month in which the materials are removed from the joint property.

(2) Materials purchased by other lessees within the Unit Area shall be invoiced by Operator and paid for by such lessees to Operator immediately following receipt of invoice and delivery of materials. Operator shall thereupon immediately pass credit to the joint account and include the same in the monthly statement of operations for the month in which the materials were paid for by such lessees.

(3) Division of materials in kind, if made between Operator and other lessees within the Unit Area shall be in proportion to their respective interests in the joint property. Each party will thereupon be charged individually with the value of the materials received or receivable and corresponding credits will be made to the

joint account by the Operator, and, both credits shall appear in the same monthly operating statement.

(4) Sales to outsiders of major materials shall be made only with the approval of the Operating Committee as to both terms and price and where made the proceeds shall be credited by Operator to the joint account at the full amount collected from vendee. Any claims by vendee for defective materials or otherwise shall be charged back to the joint account, if and when paid by Operator.

IV—Basis of Pricing Materials Transferred from Joint Account

Materials and equipment purchased by either Operator or the lessees in the Unit Area, or divided in kind between them, unless otherwise approved by the Operating Committee, shall be valued on the following basis of condition and price: (New price as used in the following paragraphs shall have the same meaning and application as that used above in Section II: "Basis of Charges to Joint Account").

(1) New Materials: (Condition "A") being new equipment or supplies purchased or procured from the joint property but never used thereon; at 100% of current new prices.

(2) Good Secondhand Materials: (Condition "B") being good serviceable materials which are further usable without repair, at:

(a) 75% of current new prices, if materials were new when originally charged to the joint property.

(b) 75% of current new prices less depreciation consistent with their usage on and service to the joint property, if materials were originally charged to the joint property as secondhand at 75% of new prices.

(3) Other Used Materials: (Condition "C") being materials further usable for their original function only after repair and reconditioning; at 50% of current new prices.

(4) Bad Order Materials: (Condition "D") being materials not further usable for their original function but

for possible other service; at 25% of current new prices.

(5) Junk: (Condition "E") being obsolete and unserviceable materials; at prevailing junk prices in the district. Where practicable, junk should be disposed of at the joint property.

(6) Temporarily Used Materials: When the use of certain items of equipment on the joint property has been only temporary, and the time of actual use thereon does not justify the deduction of depreciation as listed in (a) and (b) of Paragraph (2) hereof, such materials will be priced on a basis that will leave a net charge against the joint account consistent with the service rendered and adequate for the time the materials were in use.

V—Inventories

Periodic inventories of the materials and equipment of the joint property, which shall include such materials and equipment as are ordinarily considered controllable by Operators of oil and gas properties, shall be taken by Operator at such times and under such conditions as may be prescribed by the Operating Committee.

EXHIBIT "B"

Part I

Tract Number	Lease Name	Legal Description	Sec.	Twp.	Range	Operator	Percentage of Interest in Unit
1	Odla-Table	S/2 SE NE	29	6N	10W	Ray Stephens, Inc.	0.18442%
2	Dome-Bo	NE SE & NE SE SE	29	6N	10W	Stephens Petroleum Co.	0.78785
3	Brown	S/2 SW NW & SW SE NW	28	6N	10W	Stephens Petroleum Co.	0.08253
4	Pell	W/2 SW	28	6N	10W	Stephens Petroleum Co.	3.51358
5	Pell	E/2 SW	28	6N	10W	Gulf Oil Corporation	2.65959
6	Pohleman	NE NW & NE SE NW & NE NW NW	33	6N	10W	Stephens Petroleum Co.	1.96799
7	Wilhite	N/2 SE less SW NE SE	28	6N	10W	Ray Stephens, Inc.	0.07288
8	Wilhite	SW NE SE	28	6N	10W	Ray Stephens, Inc.	0.01154
9	Samwill	W/2 SW SE & SE SW SE & SW SE SE	28	6N	10W	Stephens Petroleum Co.	1.18366
10	Wilhite	NE SW SE	28	6N	10W	Ray Stephens, Inc.	0.04615
11	Wilhite	NW SE SE	28	6N	10W	Ray Stephens, Inc.	0.01540
12	Wilhite	NE SE SE	28	6N	10W	Ray Stephens, Inc.	0.01749
13	Wilhite	SE SE SE	28	6N	10W	Ray Stephens, Inc.	0.02700
14	Sherritt	NE/4 less SW SW NE	33	6N	10W	Gulf Oil Corporation	13.11109
15	Beemer	NE SE less SW NE SE	33	6N	10W	Amerada Petroleum Co.	1.12313
16	Farwell	NW SW & NE SW SW & S/2 NE SW & NE SE SW	27	6N	10W	Ray Stephens, Inc.	0.07715
17	Farwell-Becker	S/2 SW SW & W/2 SE SW	27	6N	10W	Stephens Petroleum Co.	0.11581
18	Fletcher	NW/4	34	6N	10W	Phillips Petroleum Co.	5.37390
19	Plummer—W/2	NW SW & NE SW SW	34	6N	10W	Stephens Petroleum Co.	4.09025
20	Plummer—E/2	E/2 SW less SW SE SW	34	6N	10W	Stephens Petroleum Co.	6.86555
21	Griffin	S/2 NW SE	27	6N	10W	Ray Stephens, Inc.	0.00828
22	Griffin	S/2 NE SE	27	6N	10W	Ray Stephens, Inc.	0.00163
23	Loose	S/2 SE	27	6N	10W	Sunray Oil Corporation	0.31227
24	Ulrey	N/2 NE	34	6N	10W	Sunray Oil Corporation	0.43240
25	Garrison	S/2 NE	34	6N	10W	Sunray Oil Corporation	0.31484
26	Oaks	SE/4	34	6N	10W	Phillips Petroleum Co.	11.21393
27	Garn "A"	SE SE SW	26	6N	10W	Phillips Petroleum Co.	0.02277
28	Farwell	N/2 NW	35	6N	10W	Phillips Petroleum Co.	0.18958
29	Dixon	S/2 NW	35	6N	10W	Sunray Oil Corporation	0.52429
30	Sterba (below 6000')	SW/4	35	6N	10W	Gulf Oil Corporation	2.15688
31	Sterba (above 6000')	SW/4	35	6N	10W	Palmer Oil Corporation	5.51614
32	Margaret	N/2 NW less SW NW NW	2	5N	10W	Phillips Petroleum Co.	3.87549
33	Holland	NE SE NW	2	5N	10W	Gulf Oil Corporation	0.06049
34	Melton	NW SW SE & SE SW SE & NW SE SE & SE SE SE	26	6N	10W	Ray Stephens, Inc.	0.02614
35	Melton No. 2	NE SW SE	26	6N	10W	Ray Stephens, Inc.	0.00198

The lower portion of this Exhibit appears in the frame immediately below.

APPENDIX "D"

OIL AND GAS LEASE OWNED BY THE PALMER OIL CORPORATION, WITH ROYALTY RIGHTS OWNED BY PAUL STERBA AND PAUL STERBA, JR.

Filed for record Feb. 26, 1936 at 11:00 A. M.
R. L. Goodfellow County Clerk (Seal)

Oil & Gas Lease

Agreement, made and entered into the 12th day of February, 1936, by and between Paul Sterba and wife, Gertrude K. Sterba, and Helen Catherine Jackson, nee Sterba, and husband Clifford Jackson, of Kay County & Canadian County, Oklahoma, hereinafter called lessor (whether one or more) and Chris Pearson, hereinafter called lessee:

Witnesseth: That the said lessor, for and in consideration of One & No/Dollars, cash in hand paid, the receipt of which is hereby acknowledged, and of the covenants and agreements hereinafter contained on part of lessee to be paid, kept and performed, has granted, demised, leased and let and by these presents does grant, demise, lease and let unto the said lessee for the sole and only purpose of mining and operating for oil and gas and of laying of pipe lines, and of building tanks, powers, stations and structures thereon to produce, save and take care of said products, all that certain tract of land situate in the county of Caddo, State of Oklahoma, described as follows, to-wit:

The Southwest Quarter, of Section 35, Township 6 N, Range 10 W, and containing 160 acres, more or less.

It is agreed that this lease shall remain in force for a term of five years from this date, and as long thereafter as oil or gas or either of them is produced from said land by lessee.

In consideration of the premises the said lessee covenants and agrees:

1st. To deliver to the credit of lessor, free of cost, in the pipe line to which lessee may connect wells on said land, the equal one-eighth part of all oil produced and saved from the leased premises.

2nd. To pay lessor one-eighth (⅛) of the gross proceeds each year, payable quarterly for the gas from each well where gas only is found, while the same is being used off the premises and if used in the manufacture of gasoline a royalty of one-eighth (⅛) payable monthly at the prevailing market rate for gas; and lessor to have gas free of cost from any such well for all stoves and all inside lights in the principle dwelling on said land during the same time, by making lessor's own connections with the well at lessor's own risk and expense.

3rd. To pay lessor for gas produced from any oil well and used off the premises or in the manufacture of gasoline or any other product a royalty of one-eighth (⅛) of the proceeds, at the mouth of the well, payable monthly at the prevailing market rate.

If no well be commenced on said land on or before the 12th day of February, 1937, this lease shall terminate as to both parties, unless the lessee shall on or before that date pay or tender to the lessor or to the lessors credit in the The Security Bank of Ponca City, Okla., or its successors, which shall continue as the depository regardless of changes in the ownership of said land, the sum of One hundred sixty & No/100 Dollars which shall operate as a rental and cover the privilege of deferring the commencement of a well for twelve months from said date. The payment herein referred to may be made in currency, draft or check at the option of the lessee; and the depositing of such currency, draft or check in any post office, with sufficient postage and properly addressed to the lessor, or said bank, on or before said last mentioned date, shall be deemed payment as herein provided. In like manner and upon like payments or tenders, the commencement of a well may be further deferred for like periods of the same number of months successively.

And it is understood and agreed that the consideration first recited herein, the down payment, covers, not only the privilege granted to the date when said first rental is payable as aforesaid, but also the lessee's option of extending that period as aforesaid, and any and all other rights conferred.

Should the first well drilled on the above described land be a dry hole, then and in that event, if a second well is not commenced on said land within twelve months from the expiration of the last rental period for which rental has been paid, this lease shall terminate as to both parties, unless the lessee on or before the expiration of said twelve months shall resume the payment of rentals, in the same amount and in the same manner as hereinbefore provided. And it is agreed that upon the resumption of the payment of rentals as above provided, that the last preceding paragraph hereof governing the payment of rentals and the effect thereof, shall continue in force just as though there had been no interruption in the rental payments, and if the lessee shall commence to drill a well within the terms of this lease or any extension thereof, the lessee shall have the right to drill such well to completion with reasonable diligence and dispatch, and if oil or gas, or either of them, be found in paying quantities, this lease shall continue and be in force with like effect as if such well had been completed within the ferm of years first mentioned.

If said lessor owns a less interest in the above described land than the entire and undivided fee simple estate therein, then the royalties and rentals herein provided for shall be paid the said lessor only in the proportion which lessor's interest bears to the whole and undivided fee.

Lessee shall have the right to use, free of cost, gas, oil and water produced on said land for lessee's operations thereon, except water from the wells of lessor.

When requested by lessor lessee shall bury lessee's pipe lines below plow depth.

No well shall be drilled nearer than 200 feet to the house or barn now on said premises without written consent of lessor.

Lessee shall pay for damages caused by lessee's operations to growing crops on said land.

Lessee shall have the right at any time to remove all machinery and fixtures placed on said premises, including the right to draw and remove casing.

If the estate of either party hereto is assigned and the privilege of assigning in whole or in part is expressly allowed, the covenants hereof shall extend to their heirs, executors, administrators, successors or assigns, but no change in the ownership of the land or assignments of rental or royalties shall be binding on the lessee until after the lessee has been furnished with a written transfer or assignment or a true copy thereof and it is hereby agreed that in the event this lease shall be assigned as to a part or as to parts of the above described lands and the assignee or assignees of such part or parts shall fail or make default in the payment of the proportionate part of the rents due from him or them, such default shall not operate to defeat or affect this lease in so far as it covers a part or parts of said lands, upon which the said lessee or any assignee thereof shall make due payment of said rental, and this lease shall never be forfeited for non-payment of any rental due until after at least ten days written notice by registered mail or in person shall have been given the lessee.

Lessor hereby warrants and agrees to defend the title to the lands herein described and agrees that the lessee shall have the right at any time to redeem for lessor, by payment, any mortgages, taxes or other liens on the above described lands, in the event of default of payment by lessor, and be subrogated to the rights of the holder thereof, and the undersigned, lessors, for themselves and their heirs, successors, and assigns, hereby surrender and release all right of dower and homestead in the premises described herein, insofar as said right of dower and homestead may in any way affect the purposes for which this lease is made as recited herein.

In Testimony Whereof We Sign, this the 12th day of February, 1936.

HELEN CATHERINE JACKSON (s)
CLIFFORD JACKSON (s)
PAUL STERBA (s)
GERTRUDE K. STERBA (s)

STATE OF OKLAHOMA,
County of Canadian, SS:

Be it remembered, That on this 12th day of February A. D. 1936, before me, a Notary Public in and for said County and State, personally appeared Helen Catherine Jackson, nee Sterba, and Clifford Jackson, her husband, to me known to be the identical persons described in and who executed the within and foregoing instrument and acknowledged to me that they executed the same as their free and voluntary act and deed for the uses and purposes therein set forth.

In witness whereof, I have hereunto set my official signature and affixed my notarial seal, the day and year first above written.

(SEAL) H. C. KIMNER, *Notary Public.*

My commission expires January 2nd, 1938.

STATE OF OKLAHOMA,
County of Kay, SS:

Before me, the undersigned, a Notary Public within and for said County and State, on this 13 day of February, 1936, personally appeared Paul Sterba and wife, Gertrude K. Sterba, to me known to be the identical persons who executed the within and foregoing instrument and acknowledged to me that they executed the same as their free and voluntary act and deed for the uses and purposes therein set forth.

In testimony whereof I have hereunto set my hand and official seal the day and year last above written.

(SEAL) J. R. MEET, *Notary Public.*

My commission expires Feb. 14, 1936.

APPENDIX "E"

EXHIBIT 35

12-1-1938 Jacob Roessler Lease No. 29,873 RGL.W

Assignment

This Assignment, made in duplicate, this 6th day of December, 1938, between Gulf Oil Corporation, a Pennsylvania corporation, with offices at Tulsa, Oklahoma, hereinafter referred to as "Gulf, first party, and The Palmer Oil Corporation, of Wichita, Kansas, second party," hereinafter called "Palmer",

Witnesseth That

Whereas, Gulf is the owner and holder of an oil and gas mining lease dated February 12, 1936, executed by Paul Sterba and wife, Gertrude K. Sterba, and Helen Catherine Jackson, nee Sterba, and husband, Clifford Jackson, as lessors, to Chris Pearson, as lessee, covering the Southwest quarter of Section 35, Township 6 North, Range 10 West, Caddo County, Oklahoma, filed for record in the office of the County Clerk of Caddo County, Oklahoma on February 26, 1936 at eleven o'clock A. M. and duly recorded in Book 75 at page 316; and,

Whereas, on the 6th day of September, 1938 a contract was entered into between Gulf Oil Corporation as first party and The Palmer Oil Corporation as second party by the terms of which Gulf was to assign the lease to Palmer, hereinabove referred to, to the depth of 6,000 feet, retaining and reserving the oil and gas mining lease as to all oil, gas and other minerals below the depth of 6,000 feet, together with an overriding royalty; and,

Whereas, Palmer has complied with the contract in so far as to entitle it to an assignment of the lease in accordance with the terms of the contract;

Now, therefore, in consideration of the premises, Gulf hereby sells, assigns, transfers and sets over to Palmer, without covenants of warranty, all of its right, title and

interest in and to the above described lease to the depth of 6,000 feet, retaining the lease as to the oil, gas and casing- [fol. 228] head gas, together with all the rights, privileges and appurtenances thereunto belonging, below the depth of 6,000 feet.

To have and to hold the same, subject to all the covenants, conditions and provisions in said lease contained.

Gulf hereby reserves and retains the lease as to the oil, gas and casinghead gas below the depth of 6,000 feet, together with an overriding royalty of 1/16th of the 7/8ths working interest in the oil produced from the leased premises when the total daily production from the leased premises is fifty (50) barrels or less, per day, and 1/8th of the 7/8ths working interest in the oil produced saved and marketed from the premises when the total daily production from the leased premises exceeds fifty (50) barrels per day, also reserving and retaining an overriding royalty of 1/8th of the 7/8ths working interest in the gas and casinghead gas produced, saved and marketed or taken off the premises, which overriding royalty shall be paid in the following manner, to-wit:

Palmer agrees to run the oil produced, saved and marketed from the premises to the pipe line, or pipe lines, to which it may connect the well, or wells, under division orders placing to the credit of Gulf 1/16th of the 7/8ths working interest in the oil produced, saved and marketed from the premises, when the total gross oil produced from the leased premises is fifty (50) barrels, or less, per day, and 1/8th of the 7/8ths working interest in the oil produced, saved and marketed from the premises during the time the total gross oil produced, saved and marketed from the premises exceeds fifty (50) barrels per day, and to pay Gulf 1/8th of the proceeds of the 7/8ths working interest in the gas and casinghead gas produced, saved and marketed from the premises, payment to be made on the 20th day of each month for the gas and casinghead gas produced and sold from the premises, or used off the premises, during the preceding month. The overriding

royalty hereinabove shall be in addition to the royalty provided in the lease and payable to the lessors or their assigns.

The daily production shall be ascertained and determined, for the purposes of this contract, by taking the gross pipe line runs for the month and dividing into the same the number of days in such month, and the quotient shall be considered the total daily production from the leased premises for such month. If the test well comes into production [fol. 229] after the first of any month, the daily production for such month shall be ascertained and determined by taking the pipe line runs for the number of days the oil is run for such month and dividing into the same the number of such days, and the quotient shall be the daily production for such month for such portion of the month.

8. Palmer agrees to furnish Gulf copies of daily run tickets, to be mailed to Gulf Oil Corporation, P. O. Box 661, Tulsa, Oklahoma, once each week, enclosing the daily run tickets for the preceding week, and, at the close of the month and as soon as obtainable, production tickets for the entire month. Palmer further agrees to furnish Gulf copies of all tank tables.

9. Palmer promises and agrees to produce and market each month the total allowable production for such month and if for any reason Palmer fails, neglects or refuses to produce and market such allowable, Palmer shall promptly advise Gulf, in writing, furnishing in detail the reasons for not producing and running the allowable for such month.

This Assignment is made subject to contract of September 6th, 1938 between Gulf Oil Corporation, first party, and The Palmer Oil Corporation, second party, which contract is hereby referred to and made a part hereof, the same as if herein copied in full.

It is further agreed that any assignment by Palmer shall by reference incorporate the contract of September 6, 1938 as a part thereof and specifically provide for the payment of the overriding royalty to Gulf.

Dated the day and date first above written.

Gulf Oil Corporation, By Rush Greenslade, Vice-President. The Palmer Oil Corporation, By Tom Palmer, President.

Attest: D. B. Catterlin, Assistant Secretary.
Attest: Otto H. Schnepel, Secretary.

[fol. 230] STATE OF OKLAHOMA,
County of Tulsa, ss.:

Before me, the undersigned, a Notary Public in and for said County and State, on this 15th day of December, 1938, personally appeared Rush Greenslade, to me known to be the identical person who subscribed the name of the Maker thereof, Gulf Oil Corporation, to the foregoing instrument as its Vice-President, and acknowledged to me that he executed it as his free and voluntary act and deed and as the free and voluntary act and deed of such corporation, for the uses and purposes therein set forth.

Witness my hand and seal, the day and year last above written.

E. B. Benton, Notary Public.

My commission expires Dec. 17, 1938.

STATE OF KANSAS,
County of Sedgwick, ss.:

Before me, the undersigned, a Notary Public in and for said County and State, on this 6th day of December, 1938, personally appeared Tom Palmer, to me known to be the identical person who subscribed the name of the Maker thereof, The Palmer Oil Corporation, to the foregoing instrument as its President, and acknowledged to me that he executed it as his free and voluntary act and deed and as the free and voluntary act and deed of such corporation, for the uses and purposes therein set forth.

Witness my hand and seal, the day and year last above written.

Jewell Thompson, Notary Public.

My Commission expires March 3, 1941.

APPENDIX "F"

Exhibit 34

This Agreement made in duplicate this 6th day of September, 1938, between Gulf Oil Corporation, a Pennsylvania corporation, with offices at Tulsa, Oklahoma, first party, hereinafter called "Gulf", and The Palmer Oil Corporation, of Wichita, Kansas, second party, hereinafter called "Palmer",

Witnesseth, that

Whereas, Gulf is the owner and holder of an oil and gas mining lease dated February 12, 1936, executed by Paul Sterba and Gertrude K. Sterba, his wife, and Helen Catherine Jackson, nee Sterba, and Clifford Jackson, her husband, as lessors, to Chris Pearson, as lessee, covering the

> Southwest Quarter (SW¼) of Section 35, Township 6 North, Range 10 West, Caddo County, Oklahoma,

and filed for record in the office of the County Clerk of Caddo County, Oklahoma, February 26, 1936 at 11:00 o'clock A. M., and recorded in book 75 at page 316; and,

Whereas, Gulf has agreed to assign the lease without covenants of warranty to Palmer and the oil, gas and other minerals above the depth of 6000 feet, retaining an overriding royalty, in consideration of the covenants and promises and agreements hereinafter contained:

Now, therefore, in consideration of the premises and the mutual covenants and agreements hereinafter set out, it is agreed as follows, to-wit:

1. Palmer agrees within thirty (30) days from the date of the execution of this contract to commence drilling operations for oil and gas, or either of them, in the center of the

> Northeast Quarter (NE¼) of the Northeast Quarter (NE¼) of the Southwest Quarter (SW¼) of Section 35, Township 6 North, Range 10 West, Caddo County, Oklahoma,

and with diligence and dispatch and at its sole cost and expense drill said well to a total depth of six thousand (6000) feet unless oil and gas, or either of them, or igneous rock or other impenetrable formation is encountered at a lesser depth.

2. During drilling operations, Palmer shall at all times afford Gulf free access to said well and the records thereof, and once each week shall forward to W. R. Thawley, P. O. Box 661, Tulsa, Oklahoma, written report showing all formations encountered, including the depth thereof, and [fol. 182] upon request and in receptacles furnished by Gulf, send to W. R. Thawley samples or cuttings of formations and waters penetrated. In event said well shall be completed to a dry hole, Palmer shall forthwith measure the depth of said well by running a steel measuring line therein, and shall notify Gulf of its intention to measure said well in time for Gulf to have a representative at the well to witness the measurement thereof. Upon completion of said well Palmer shall furnish Gulf with complete certified log thereof and samples and cuttings of formations saved in the course of drilling, and such other information disclosed by said drilling as may be demanded by Gulf.

3. In event Palmer shall fail to commence and complete the aforesaid well, or cease drilling operations on the same for a period of more than ten (10) days, unless such delay is due to the Act of God or the public enemy, then all rights of Palmer under this agreement shall forthwith terminate.

4. If the aforesaid well shall be drilled and shall be found dry, Palmer shall promptly plug the same at its sole cost and expense and retain all salvage from said well as his own, said work to be performed in compliance with the laws of the State of Oklahoma and the Rules and Regulations of any regulatory body having jurisdiction in the State of Oklahoma.

5. Before plugging any well and abandoning the same, Palmer shall give notice of such intention to Gulf at least

ten (10) days before the date on which said well shall be plugged and abandoned, during which ten (10) days Gulf shall have the right, but shall not be obligated so to do, to take over said hole by paying Palmer the cost of drilling such hole, plus the cost of the equipment in the well as reflected by the books and records of Palmer, and thereupon such hole and equipment therein shall become the property of Gulf, it being understood and agreed that in event Gulf takes over the hole, Palmer shall deliver the hole to Gulf free, clear and discharged of all encumbrances, and in event there are any debts or claims unpaid, Gulf shall have the power and authority to pay such indebtedenss out of the purchase price of such hole, accounting to Palmer for the balance due, if any.

6. Palmer agrees to comply with the Workmen's Compensation Laws of the State of Okahoma and furnish satisfactory evidence of such compliance, and further agrees to save harmless and indemnify Gulf from and on account of all liabilities of every kind or character either to person or [fol. 183] property incurred during the performance of this agreement.

7. Gulf further promises and agrees, upon full compliance with all the covenants, conditions and agreements herein contained, and completion of the test well to the depth of six thousand (6000) feet, unless oil and gas, or either of them, are found in commercial quantities at a lesser depth, or igneous rock or other impenetrable formation is encountered at a lesser depth, and upon satisfactory proof that all debts have been paid, it will assign the oil and gas mining lease hereinabove described, without covenants of warranty, insofar as it covers the oil, gas and other minerals above the depth of six thousand (6000) feet, retaining and reserving the oil and gas and other minerals below the depth of six thousand (6000) feet, and also retaining an overriding royalty of 1/16th of the 7/8ths working interest in the oil produced when the total daily production from the leased premises is fifty (50) barrels or less per day, and 1/8th of the 7/8ths working

interest in the oil produced saved and marketed from the premises when the total daily gross oil produced from the leased premises exceeds fifty (50) barrels per day; also reserving and retaining an overriding royalty of 1/8th of the 7/8ths working interest in the gas and casinghead gas produced, saved and marketed or used off the premises, which overriding royalty is to be paid in the following manner, to-wit:

Palmer agrees to run the oil produced, saved and marketed from the premises to the pipe line or pipe lines to which it may connect the well or wells under division orders placing to the credit of the Gulf 1/16th of the 7/8ths working interest in the oil produced, saved and marketed from the premises, when the total gross oil produced from the leased premises is fifty (50) barrels or less per day, and 1/8th of the 7/8ths working interest in the oil produced, saved and marketed from the premises during the time the total gross oil produced, saved and marketed from the premises exceeds fifty (50) barrels per day, and to pay Gulf 1/8th of the proceeds of the 7/8ths working interest in the gas and casinghead gas produced, saved and marketed from the premises, payment to be made on the 20th day of each month for the gas and casinghead gas produced and sold from the premises or used off the premises during the preceding month. The overriding royalty hereinabove shall be in addition to the royalty provided in the lease and payable to the lessor or their assigns.,

[fol. 184] The daily production shall be ascertained and determined, for the purposes of this contract, by taking the gross pipe line runs for the month and dividing into the same the number of days in such month, and the quotient shall be considered the total daily production from the leased premises for such month. If the test well comes into production after the first of any month, the daily production for such month shall be ascertained and determined by taking the pipe line runs for the number of days the oil is run for such month and dividing into the same the number of such days, and the quotient shall be

the daily production for such month for such portion of the month.

8. Palmer agrees to furnish Gulf copies of daily run tickets, to be mailed to Gulf Oil Corporation, P. O. Box 661, Tulsa, Oklahoma, once each week, enclosing the daily run tickets for the preceding weeks, and, at the close of the month and as soon as obtainable, production tickets for the entire month. Palmer further agrees to furnish Gulf copies of all tank tables.

9. Palmer promises and agrees to produce and market each month the total allowable production for such month and if for any reason Palmer fails, neglects or refuses to produce and market such allowable, Palmer shall promptly advise Gulf in writing, furnishing in detail the reasons for not producing and running the allowable for such month.

10. After the execution of the foregoing assignment, Palmer agrees to perform all of the covenants, express and implied, in the lease insofar as oil and gas development or offsets of oil and gas wells are concerned, and to save harmless Gulf from any claims on the part of the lessors or any of them, or royalty owners on account of any alleged failure to perform any such obligation, and further agrees to defend any suits that may be filed against Gulf on account of such failure, and to pay any judgment that may be obtained against Gulf, and in event Palmer shall fail to offset any paying oil or gas well, Gulf shall have the right and option, but shall not be obligated so to do, it being purely optional with it, to drill such well if Palmer shall fail to commence actual operations on the land for the drilling of such well or wells within forty-five (45) days after demand in writing by Gulf to Palmer, and shall thereafter diligently continue the drilling of such well, and in such case, if Gulf drills such well or wells, it shall have the sole right in such leases as to each well drilled, including a plot [fol. 185] of ground in square form containing ten (10) acres, the center of which shall be the well.

36	Melton No. 1	SW SW SE	26	6N	10W	Ray Stephens, Inc.	0.01211
37	Melton No. 4	SW SE SE	26	6N	10W	Ray Stephens, Inc.	0.01693
38	Sames	NE/4	35	6N	10W	Magnolia Petroleum Co.	0.57283
39	Cement-Henley	N/2 SE & N/2 SW SE	35	6N	10W	Magnolia Petroleum Co.	1.59617
40	Hays	SE SE	35	6N	10W	Anderson-Prichard Oil Corp.	0.58977
41	Pierson	S/2 SW SE	35	6N	10W	Stephens Petroleum Co.	1.47267
42	Hartshorn	N/2 NE	2	5N	10W	Phillips Petroleum Co.	8.23583
43	Hartshorn	S/2 NE less SW SW NE	2	5N	10W	Amerada Petroleum Corp.	4.03085
44	Pickard Edwards	SW SW SW	25	6N	10W	Magnolia Petroleum Co.	0.00422
45	Niles	NW NW & S/2 NW & SW NE NW	36	6N	10W	Magnolia Petroleum Co.	0.36728
46	Medrano	SW/4	36	6N	10W	Magnolia Petroleum Co.	0.59865
47	I. Edwards	NW NW	1	5N	10W	Magnolia Petroleum Co.	2.36552
48	L. L. Edwards	E/2 NW	1	5N	10W	Magnolia Petroleum Co.	1.86102
49	Edwards	SW NW	1	5N	10W	Amerada Petroleum Co.	3.54720
50	Wood	NW NW SW	1	5N	10W	Amerada Petroleum Co.	0.18412
51	Caddo-Rowe	SW SW NE	36	6N	10W	Magnolia Petroleum Co.	0.00495
52	Lindsay	S/2 SE & NW SE & SW NE SE	36	6N	10W	Magnolia Petroleum Co.	0.31433
53	Davis	NW NE	1	5N	10W	Magnolia Petroleum Co.	0.34024
54	Davis	W/2 NE NE	1	5N	10W	Potter	0.06642
55	Davis	E/2 NE NE	1	5N	10	F. L. Rookstool	0.03249
56	Walker	SW NE	1	5N	10W	Anderson-Prichard Oil Corp.	1.55533
57	Walker	SE NE	1	5N	10W	Stephens Petroleum Co.	1.18658
58	Pickard	N/2 NE SE & SE NE SE & NE NW SE	1	5N	10W	Anderson-Prichard Oil Corp.	1.09412
59	Gregory	SW SW SW	31	6N	9W	Magnolia Petroleum Co.	0.00329
60	Gingrich	NW NW	6	5N	9W	Magnolia Petroleum Co.	0.02882
61	Gingrich	SW NE NW	6	5N	9W	Stanolind Oil & Gas Co.	0.00133
62	Davis	SW NW & S/2 SE NW & NW SE NW	6	5N	9W	Anderson-Prichard Oil Corp.	0.40951
63	Davis	NE SE NW	6	5N	9W	Lloyd Noble	0.00073
64	Prentice "A"	N/2 SW	6	5N	9W	Anderson-Prichard Oil Corp.	2.58742
65	Prentice "B"	N/2 SE SW & NE SW SW	6	5N	9W	Anderson-Prichard Oil Corp.	0.52078
66	Wray	SW SW NE	6	5N	9W	Anderson-Prichard Oil Corp.	0.00065
67	McClaren "A"	NW SE	6	5N	9W	Anderson-Prichard Oil Corp.	0.06316
68	McClaren "B"	SW NE SE	6	5N	9W	Anderson-Prichard Oil Corp.	0.01446
69	McClaren	N/2 SW SE	6	5N	9W	Amerada Petroleum Co.	0.13116
70	McClaren	NW SE SE	6	5N	9W	Amerada Petroleum Co.	0.02458
71	Garn "B"	S/2 NW SW & SW SW & W/2 SE SW & NE SE SW	26	6N	10W	Phillips Petroleum Co.	0.04096
72	Farwell #2	SE SE SW & NW SW SW	27	6N	10W	Ray Stephens, Inc.	0.13935
TOTAL							100.00000%

NOTE: All leases are subject to the adjustment outlined in Exhibit "B"—Part II.

11. It is further agreed that if at any time Palmer desires to abandon any oil or gas well drilled by it on the leased premises or desires to abandon the entire leased premises, Gulf shall be given (30) days' notice of such intention and during such 30 days Gulf shall have the option to take over such well or wells or Palmer's interest in the entire leased premises by paying Palmer the salvage value of the equipment in the well or wells, and/or the leased premises and, upon Gulf exercising such option, Palmer shall assign to Gulf its interest in the leased premises as to the well or wells taken over or the entire leased premises, as the case may be, free, clear and discharged of all liens or encumbrances of whatsoever kind or nature. In event Gulf does not elect to take over any well or wells Palmer has drilled on the leased premises and/or the entire leased premises, Gulf shall be entitled, if it so demands, to a re-assignment of the lease free, clear and discharged of all liens and encumbrances and Palmer shall be entitles to the salvage value of the equipment placed thereon; Provided, in event Gulf shall take over a well or wells as herein provided and not the entire leased premises, the re-assignment shall extend only to a tract of land surrounding each well containing ten (10) acres in a square form, the center of which shall be the well taken over.

12. It is further agreed between the parties that Palmer will at all times keep said lease free, clear and discharged of all liens, charges or encumbrances of whatsoever kind or character and protect and save harmless and indemnify Gulf on account of any loss, damage, or liability it may suffer or sustain, or become subject to, on account of the operation of the premises by Palmer.

13. It is further agreed that Palmer shall not assign or release the lease, or any interest therein, without procuring the consent of Gulf in writing.

14. This contract is entered into in accordance with and shall at all times be subject to the laws of the State of Oklahoma, and the rules and regulations of the Corpora-

tion Commission, the laws of the United States, and the rules and regulatory orders of any Board, Federal or State, having jurisdiction in the premises.

[fol. 186] 15. All notices necessary to be given under the terms of this agreement shall be in writing, by registered mail, addressed to the Gulf Oil Corporation, P. O. Box 661, Tulsa, Oklahoma, and The Palmer Oil Corporation, Wichita, Kansas.

Witness the signatures of the parties hereto the day and year first above written.

Gulf Oil Corporation, by Rush Greenslade, Vice-President.

Attest: D. B. Catterlin, Assistant Secretary.

The Palmer Oil Corporation, by Tom Palmer, President.

Attest: Otto H. Schnepel, Secretary.

[fol. 187] STATE OF OKLAHOMA,
County of Tulsa, ss:

Before me, the undersigned notary public in and for said county and state, on this 7th day of September, 1938, personally appeared Rush Greenslade, to me known to be the identical person who subscribed the name of the Gulf Oil Corporation, a corporation, the maker thereof, to the within and foregoing instrument as its Vice President, and acknowledged to me that he executed the same as his free and voluntary act and deed and as the free and voluntary act and deed of such corporation, for the uses and purposes therein set forth.

Witness my hand and seal the day and year last above written.

E. G. Grear, Notary Public.

My commission expires Dec. 31, 1941.

STATE OF KANSAS,
County of Sedgwick, ss:

Before me the undersigned notary public in and for said county and state, on this 6th day of September, 1938, personally appeared Tom Palmer, to me known to be the identical person who subscribed the name of The Palmer Oil Corporation, a corporation, the maker thereof, to the within and foregoing instrument as its President, and acknowledged to me that he executed the same as his free and voluntary act and deed and as the free and voluntary act and deed of such corporation, for the uses and purposes therein set forth.

Witness my hand and seal the day and year last above written.

Jewell Thompson, Notary Public,

My commission expires March 3, 1941.

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CHARLES ELMORE CROPLEY

In The
Supreme Court of the United States

No. 302

KIT C. FARWELL; FRANK PHOHLEMANN;
L. A. DAVIS *et al.*,

Appellants,

VERSUS

AMERADA PETROLEUM CORPORATION;
ANDERSON-PRICHARD OIL CORPORATION;
GULF OIL CORPORATION *et al.*,

Appellees.

BRIEF OF PETITIONERS

JIM HATCHER,
REFORD BOND, JR.,
Chickasha, Oklahoma,
Attorneys for Appellants.

APRIL, 1952.

KING LAW BRIEF CO., 222 N.W. THIRD, OKLAHOMA CITY — PHONE 3-2969

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In The
Supreme Court of the United States

No. 302

KIT C. FARWELL; FRANK PHOHLEMANN;
L. A. DAVIS *et al.*,
Appellants,

VERSUS

AMERADA PETROLEUM CORPORATION;
ANDERSON-PRICHARD OIL CORPORATION;
GULF OIL CORPORATION *et al.*,
Appellees.

BRIEF OF PETITIONERS

OPINION BELOW

The opinion of the Supreme Court of the State of Oklahoma (R. 28) is reported at 204 Okl. 543, 231 P. 2d 997.

JURISDICTION

The final judgment of the Supreme Court of the State of Oklahoma, the highest court in the State of

Oklahoma was entered May 22, 1951 (R. 116). The application for appeal was presented to the Supreme Court of Oklahoma, July 30, 1951. The jurisdiction of this Court rests on Title 28, U.S.C.A.; Sec. 1257; June 25, 1948, Ch. 646, 62 Stat. 929, and Title 28, U.S.C.A., Sec. 2101 (c); June 25, 1948, Ch. 646, 62 Stat. 961, amended May 24, 1949, Ch. 139, Sec. 106, 63 Stat. 104, and the following decisions also sustain the appellate jurisdiction:

Champlin Refining Co. v. *Corporation Commission*, 286 U.S. 210, 76 L. ed. 1062;

Thompson v. *Consolidated Gas Utilities*, 300 U.S. 55, 81 L. ed. 510;

Hunter Co. v. *McHugh*, 320 U.S. 222, 88 L. ed. 5.

The petitioners first raised the Federal questions sought to be reviewed by filing Answers to the Application of the respondents before the Corporation Commission of the State of Oklahoma on May 21, 1947 (R. 813 and 815 - 821 and 825), introduced (R. 809) leave having been first granted to file such Answers. The same Federal questions were again raised on Motion for Judgment before the Corporation Commission (R. 1312 to 1319) and in the Motion for New Trial filed before the Corporation Commission (R. 1300 and 1314). The questions were again raised in their Petition in Error filed in the Supreme Court of the State of Oklahoma appealing from the judgment of the Corporation Commission

(R. 146) and in their Briefs filed in the Supreme Court of Oklahoma and in oral argument before the Supreme Court of Oklahoma, and again in the Petition for Rehearing filed before the Supreme Court of the State of Oklahoma after the decision of said court was first made (R. 79).

The Corporation Commission of the State of Oklahoma did not pass upon the Federal questions raised as appears from Order No. 20289 (R. 1239).

The Supreme Court of the State of Oklahoma by opinion and decision of March 20, 1951, Order of May 22, 1951, denying Petition for Rehearing (R. 116), and Order of the 5th day of June, 1951, denying Application to file Second Amended Petition (R. 130), held that the Unitization Act and Order No. 20289 did not violate Sec. 10, Art. I of, or the 5th, or 14th Amendments to the United States Constitution (R. 28).

1 a. Excerpt from Answer of oil and gas lessors filed with the Corporation Commission May 21, 1947:

> "2. For further defense, the undersigned allege that the statute of the State of Oklahoma, being Title 52, Sections 286.1 to 286.17, Oklahoma Statutes Annotated, upon which the petitioners base their application for the creation of the West Cement Medrano Unit, violates:
>
> "(a) The Fourteenth Amendment to the United States Constitution, Section 1, in that it attempts to take the property of the undersigned without due process of law and denies to the undersigned the equal protection of the laws.

"(b) The Fifth Amendment to the Constitution of the United States in that it seeks to take the property of the undersigned without due process of law and without just compensation.

"(c) Article 1, Section 10 of the United States Constitution, in that said statute impairs the obligation of the contract between the undersigned lessors and the petitioning lessees.

"(d) The Fourteenth Amendment to the United States Constitution, Section 1, prohibiting abridgement of privileges and immunities of citizens of the United States", (R. 816).

1 b. Excerpts from Answer of Clyde Kahle, overriding royalty owner, filed May 21, 1947:

(Same as allegations in Paragraph 1 a.) (R. 827).

1 c. Excerpts from Answer of Tom Potter, minority-lessee, filed May 21, 1947:

(Same as allegations in Paragraph 1 a.) (R. 822).

Note: Corporation Commission of the State of Oklahoma did not pass upon or even mention constitutional questions.

3. Excerpt from Petition in Error filed in Supreme Court of the State of Oklahoma:

"1. The said Commission erred in rendering judgment for the defendants in error in that statutes of Oklahoma, Title 52, Sections 286.01 to 286.17 Oklahoma Statutes Annotated and upon which said Commission based its authority to render said judgment, violate the Constitution of the United States of America and particularly violate the following Amendments and Articles thereof to-wit:

"(a) The Fourteenth Amendment to the United States Constitution, Section 1 in that said statutes attempt to take the property of the plaintiffs in error without due process of law and denies to them the equal protection of the laws.

"(b) The Fifth Amendment to the Constitution of the United States in that said statutes seek to take the property of the plaintiffs in error without due process of law and without just compensation.

"(c) Article 1, Section 10 of the United States Constitution, in that said statutes impair the obligation of the several separate contracts between the lessor, plaintiff in error, and the lessee, defendants in error.

"(d) The Fourteenth Amendment to the United States Constitution, Section 1, prohibiting abridgement of privileges and immunities of citizens of the United States" (R. 159).

4. Excerpt from opinion of the Supreme Court of Oklahoma denying petitioner's contention that Oklahoma's Unitization Act violates United States Constitution:

"3. House Bill 339 of the 1945 Legislature (Tit. 52, O.S. Supp. 1947, Secs. 286.1 to 286.17) known as the Unitization Act is not violative of Secs. 7, 15, 23 or 24 of Art. II, or Sec. 1 of Art. IV or Secs. 1 or 51 of Art. V of the Constitution of the State of Oklahoma, nor violative of Sec. 10 of Art. I, of, or of the Fifth or Fourteenth Amendments to the Constitution of the United States" (R. 29).

5. Excerpt from Petition for Rehearing filed in the Supreme Court of the State of Oklahoma:

"The plaintiffs in error call the Honorable Court's attention to the fact that said decision overlooked the

questions decisive of the case and duly submitted by counsel as follows:

"* * * 2. The 14th Amendment to the Constitution of the United States, Section 1, quotes as follows:

> 'All persons born or naturalized in the United States and subject to the jurisdiction thereof, are citizens of the United States and of the State wherein they reside. *No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States, nor shall any State deprive any person of* life, liberty, or *property, without due process of law, nor deny to any person within its jurisdiction the equal protection of the laws.*'

"(a) The Unitization Act provides that it can be set in operation only by lessees of 50% of the area of the common source of supply and authorizes said majority owners to expunge the contracts of the lessors and lessees depriving the lessors of valuable contractual rights and relieving the lessees from heavy contractual burdens under the leases and authorizing the said majority owners to take the lands and property of the lessees and use the same for oil and gas purposes and to fix the compensation of the lessors therefor and gives the minority lessees the right to place the Act in operation or to fix the compensation of the parties involved for the loss of their royalty or any other contractual rights or property which patently denies to the lessors and to the minority lessees, all of whom are citizens of the United States, the equal protection of the laws as provided in the above provisions of the United States Constitution. * * *

"Article 1, Section 10 of the United States Constitution quotes as follows:

> 'No *State shall* enter into any treaty, alliance or confederation; grant letters of marque and

reprisal: coin money; emit bills of credit; make anything but gold and silver coin a tender of payment of debts; *pass any* bill of attainder, *ex post facto law*, or *law impairing the obligation of contracts*; or grant any title of nobility.' [The latter part of the above Section has been omitted.]

"The Unitization Act violates the Constitution of the United States in that the above Section thereof prohibits any State from passing any law impairing the obligation of contract. An exception has been made to said provision of the Constitution of the United States which permits the States in the exercise of the police power to enact laws impairing contracts provided the exercise of such power is reasonable and nondiscriminatory. The purpose of the exercise of the police power by the State of Oklahoma under the Unitization Act is to insure unit operation of common sources of supply of oil and gas in proper cases. In order to accomplish such unit operation it is not necessary to deprive the lessor of his right to the termination of the lease (under its own terms) for failure to produce oil or gas from the premises, because immediately upon the termination of the lease under its own terms, the lessor and owner of the minerals may be substituted for the former lessee in the unitization program without affecting in any way the unit operation of the common source of supply. The Unitization Act deprives the lessor of his right to terminate his oil and gas lease for failure of the lessee to produce oil or gas from the premises after the expiration of the primary term. It has always been the very essence of 'unless' oil and gas leases that the lessee was obligated to spend large sums of money in the development of the premises for oil and gas in order to extend the lease beyond the primary term and that unless the lessee did drill on the lands and produced oil and gas from the premises within the primary term of the lease that the said lease would expire and

the oil and gas rights revert to the lessor. The oil and gas rights are very valuable otherwise, the lessees would not be engaged in such extensive and expensive operations and litigation. The lessor has the right to hold the lessee to the terms of the contract as they have been fixed and construed for years by the courts of this State, particularly since the enforcement of such contractual rights and obligations in no way interferes with, or impairs the unit operation of any common source of supply which may underlie any part of such oil and gas lease.

"The Unitization Act expunges the implied covenants of the oil and gas leases which require the lessee to fully develop and market and to protect the lease against drainage. It is not necessary to the unit operation of a common source of supply to strike out these covenants. The lessee can still be required to fully develop the common source of supply, to market the oil and gas therefrom, and to protect the same from drainage without affecting, in any way the unit operation of said common source of supply, yet the Unitization Act specifically provides for the expungment of implied covenants of the oil and gas leases. The Act further provides that the oil and gas leases, after unitization, should constitute one single oil and gas lease and there is no reason why the said one single lease should not bear all three of the said implied covenants. The Act further provides that a part of a common source of supply may be unitized which patently leaves open an avenue for the drainage of oil and gas to the area of the common source of supply not included in the unit. Drainage from the common source of supply may occur through a well bore drilled through the common source of supply to another common source of supply lying either above or below the unitized common source of supply. It is evident from the physical nature of things that the implied covenants requiring full development subject to the conservation laws of the State, protection against drainage,

and marketing of the oil and gas may be retained in the single lease contract and enforced against lessees without, in any way, interfering with the unit operation of the common source of supply.

"There are also numerous special provisions in the various oil and gas leases which provided, among other things, that the lessor shall have the free use of gas in houses and structures located on the premises. This particular provision is very important to the lessor and was a moving consideration in his execution of the lease. The Unitization Act expunges this provision but such expungement in no way affects the unit operation of the common source of supply. Inasmuch as many of the gas wells will be closed in it might cause the lessee to pipe gas to the lessor's premises, however, this expense would be, as the majority lessees say, *'de minimus.'*" (R. 84 to 89).

6. Excerpt from Order of the Supreme Court of the State of Oklahoma denying petitioners' Petition for Rehearing in the Supreme Court of the State of Oklahoma:

"In the Supreme Court of the State of Oklahoma, May 22, 1951.

"The Clerk is Hereby Directed to Enter the Following Orders:

"* * * 33,336 *The Palmer Oil Corporation et al.* v. *Phillips Petroleum Co.*

"All petitions for rehearing and applications for oral argument in the above styled and numbered causes denied" (R. 116).

7. Excerpt from Application for Leave to File Second Petition for Rehearing filed in the Supreme Court of Oklahoma:

"That the opinion of this court is in conflict with * * * the Constitution of the United States, and the decision of the Supreme Court of the United States in the case of *Mullane* v. *Central Hanover Bank & Trust Company*, 339 U.S. 306, decided April 24, 1950, as more fully appears from the attached Second Petition for Rehearing" (R. 128).

8. Excerpt from Order of the Supreme Court of the State of Oklahoma denying Application for Leave to File Second Petition for Rehearing:

"*In the Supreme Court of the State of Oklahoma.* June 5, 1951.

"*The Clerk is Hereby Directed to Enter the Following Orders:*

"* * * 33,336 *The Palmer Oil Corp. et al.* v. *Phillips Petroleum Co.* Application for Leave to File Second Amended Petition for Rehearing in the above styled and numbered cause denied" (R. 130).

The appeal having been perfected within ninety days from date on which the judgment of the Oklahoma Supreme Court became final is timely.

Sec. 2101, Title 28,
U. S. Code Revised.

Appeal is the proper remedy for review of a decision of a State court of last resort in favor of the validity of State statutes and of administration orders issued pursuant to legislative authority claimed to be delegated by such statutes where the statutes and the orders thereunder issued are alleged to contravene the Federal Constitution.

Sec. 1257, Title 28,
U. S. Code Revised;

Hamilton v. *Regents of the University of California*, 293 U.S. 245, 79 L. ed 343;
Charleston Federal Savings & Loan Assn. v. *Alderson*, 324 U.S. 182, 89 L. ed. 857;
Market Street Railroad Co. v. *Railroad Commission of California*, 324 U.S. 548, 89 L. ed. 1171;
Milk Wagon Drivers Union v. *Meadowmoor Dairies*, 312 U.S. 287, 85 L. ed. 836;
Postal Telegraph Cable Co. v. *Newport*, 247 U.S. 464, 62 L. ed. 1215;
Sterling v. *Constantin*, 287 U.S. 378, 77 L. ed. 375;
Pollock v. *Williams*, 322 U.S. 4, 88 L. ed. 1095;
Williams v. *North Carolina*, 325 U.S. 226, 89 L. ed. 1577;
Hoover & A. Co. v. *Evatt*, 324 U.S. 652, 89 L. ed. 1252;
United Gas Public Service Co. v. *Texas*, 303 U.S. 123, 82 L. ed. 702;
Memphis Natural Gas Co. v. *Beeler*, 315 U.S. 649, 83 L. ed. 1090;
Broad River Power Co. v. *South Carolina*, 281 U.S. 537, 74 L. ed. 1023;
Greenough v. *Tax Assessor*, 331 U.S. 486, 91 L. ed. 1621, 1630.

QUESTIONS PRESENTED

We believe the questions can best be presented by first setting forth a Brief of the State's statutes in question (52 O.S.A. 286.1 to 286.17) in chronological procedural order as follows:

Excerpt 1

Section 286.3. Jurisdiction of Corporation Commission:

"* * * the Corporation Commission of the State of Oklahoma is hereby vested with jurisdiction, power and authority, and *it shall be its duty, to supervise the administration* of this Act."

Excerpt 2

Section 286.4 (Last two sentences):

"To give the Commission jurisdiction * * *, the petition shall be filed by, * * * lessees of record of fifty per cent (50%) * * * of the area * * *. The petition * * * shall have attached thereto a recommended *plan of unitization* * * *."

Excerpt 3

Section 286.5. Plan of Unitization (4th paragraph):

"In addition to such other *terms, provisions, and conditions* found by the Commission to * * * effectuate or accomplish the purpose of this Act, and subject to the further requirements hereof, each such plan of unitization as the parties thereto may agree upon * * *, shall provide:

"(a) * * * The designation of the operator shall be by vote of the lessees in the unit in a manner provided in the plan of unitization and not by the Commission.

"(b) The division of interest * * * of the unit production among * * * the * * * tracts within the unit area * * *.

"(d) * * * the method of arriving at the compensation therefor, * * * (wells, equipment and other properties).

"g The time when * * * the unit shall or may be dissolved * * *."

Excerpt 4

Section 286.4 (1st paragraph):

"If * * * the Commission shall find * * * [here are set forth under (a), (b), (c) and (d), a statement of the cardinal principles of conservation of oil and gas and prevention of waste] * * * it shall * * * enter an order approving the creation of a unit * * * the plan of unitization approved * * * upon such terms and conditions, which are, * * * proper to protect, * * * and adjust the respective rights and obligations of the several persons affected, including royalty owners, * * *, as well as the lessees."

Excerpt 5

Section 286.6:

"If * * * within sixty (60) days after the entry of an order * * * approving the creating of the same (unit), * * * lessees of record of fifteen per cent. (15) * * * of the unit area * * * shall file written protest * * * against the creation of the unit, the Commission shall vacate all action of any kind theretofore taken and dismiss the proceedings * * *."

Excerpt 6

Section 286.9:

"Each unit * * * shall be * * * corporate, capable of suing, being sued and contracting * * * in its own name. Each such unit shall be authorized on behalf * * * of all the owners of the oil and gas rights within the unit area, * * * to supervise, manage, and conduct the further development and operations for the production of oil and gas from the unit area, pursuant to the powers conferred by the plan of unitization.

"The * * * liabilities of the lessee * * * for the payment of unit expense shall * * * be several * * * and in no event shall a lessee * * * be * * * liable * * * for more than the amount * * * charged to

his interest * * * pursuant to the plan of unitization * * *.

"* * * the unit shall have a first * * * lien upon the leasehold interest * * * in the unitized common source of supply * * * in and to each * * * tract * * * to secure the payment of * * * the unit expense charged to * * * such * * * tract. * * *"

Excerpt 7

Section 286.10. Property and contract rights (second sentence, 2nd paragraph):

"* * * The unit production * * * shall be owned by the several persons to whom the same is allocated under the plan of unitization. * * *"

(3rd paragraph):

"The amount of the unit production allocation to each separately-owned tract within the unit, and only that amount, regardless of the well or wells in the unit area from which it may be produced, and regardless of whether it be more or less than the amount of the production from the well or wells, if any, on any such separately-owned tract, shall for all intents, uses, and purposes be regarded and considered as production from such separately-owned tract, and, * * * shall be distributed among * * * the several persons entitled to share in the production for such separately-owned tract * * * in the same proportions, * * * that they would have * * * shared * * * had not said unit been organized * * *."

(Paragraph 4):

"Operations carried on * * * in accordance with the plan * * * shall be * * * considered as a * * * compliance with all of the provisions, covenants, and conditions, express or implied, of the several oil and gas mining leases upon lands included within the unit area, * * *. Wells drilled or operated on

shall * * * be regarded as wells drilled on each separately-owned tract."

In view of the rights given the majority lessees under the above quoted excerpts from the Unitization Act, there are presented the following:

QUESTIONS

1. Whether the failure of the Act [Section 286.4, last two sentences, Excerpt 2, Page 13 of the Brief] to permit the lessors to file a Petition to invoke the statute violates the Article 1, Section 10 of, or the 5th Amendment to or the 14th Amendment to the U. S. Constitution.

2. Whether the failure of the Act [Section 286.5 (b), Excerpt 3, Page 12 of the Brief] to permit the lessors to file a plan for the division of the unit production—violates Article 1, Section 10 of, or the 5th Amendment to, or the 14th Amendment to the U. S. Constitution.

3. Whether the provisions of the Act [Section 286.10, 4th paragraph, Excerpt 7, Page 14 of the Brief], expunging, the provisions, covenants and conditions expressed and implied of the leases favorable to the lessors —violates Article 1, Section 10, of, or the 5th Amendment to, or the 14th Amendment to the U. S. Constitution.

4. Whether the provisions of the Act [Section 286.10, 3rd paragraph, Excerpt 7, Page 14 of the Brief], denying the lessors any right to adjustment on the roy-

alties provided in leases as against the lessees therein—violates Article 1, Section 10 of, or the 5th Amendment to, or the 14th Amendment to the U. S. Constitution.

5. Whether the provisions of the Act [Section 286.10, 4th paragraph, Excerpt 7, Page 14 of the Brief], extending the term of the leases in favor of the lessees and against the lessors—violates Article 1, Section 10 of, or the 5th Amendment to, or the 14th Amendment to the U. S. Constitution.

6. Whether the failure of the Act [Section 286.5 (d), Excerpt 3, Page 12 of the Brief] to permit a minority lessee to file a plan for the fixing of compensation for wells and equipment taken by the majority lessees—violates Article 1, Section 10 of, or the 5th Amendment to, or the 14th Amendment to the U. S. Constitution.

7. Whether the failure of the Act [Section 286.6, Excerpt 6, Page 13 of the Brief] to permit the lessors to file a protest and thereby vacate all action taken under the Act (the division of the oil and gas)—violates Article 1, Section 10, of, or the 5th Amendment to, or the 14th Amendment to the U. S. Constitution.

STATUTES INVOLVED

The statutes involved are printed in the appendix.

STATEMENT

This action was commenced under authority of Tit. 52, O.S.A., Secs. 286.1 to 286.17, by Phillips Petroleum

Page 175 of "Brief of Appellants. (See preceding microcard)

R 10 W

R 9 W

T 6 N

T 5 N

MAP OF
WEST CEMENT MEDRANO UNIT
BY
COMMITTEE OF GEOLOGISTS

SET OF FOUR MAPS - MAP NO 1

STRUCTURAL GEOLOGICAL MAP

DATUM - TOP OF THE MEDRANO SAND

CONTOUR INTERVAL - 100 FEET

SCALE

DATE - APRIL 29, 1946

COMMITTEE OF GEOLOGISTS

J. LAWRENCE MUIR - AMERADA PETROLEUM CORPORATION
R. W. BRAUCHLI - AMBERSON-RICHARDS OIL CORPORATION
A. W. RICHARDS
J. T. RICHARDS - GULF OIL CORPORATION
W. L. MOREMAN - MAGNOLIA PETROLEUM COMPANY
A. J. MONTGOMERY - PHILLIPS PETROLEUM COMPANY
I. CURTIS HICKS
P. A. WALLACE - STEPHENS PETROLEUM COMPANY AND RAY STEPHENS INC.

LEGEND

- DRILLING WELL
- OIL WELL
- GAS WELL
- DRY HOLE
- OIL WELL - MEDRANO SAND
- GAS WELL - MEDRANO SAND

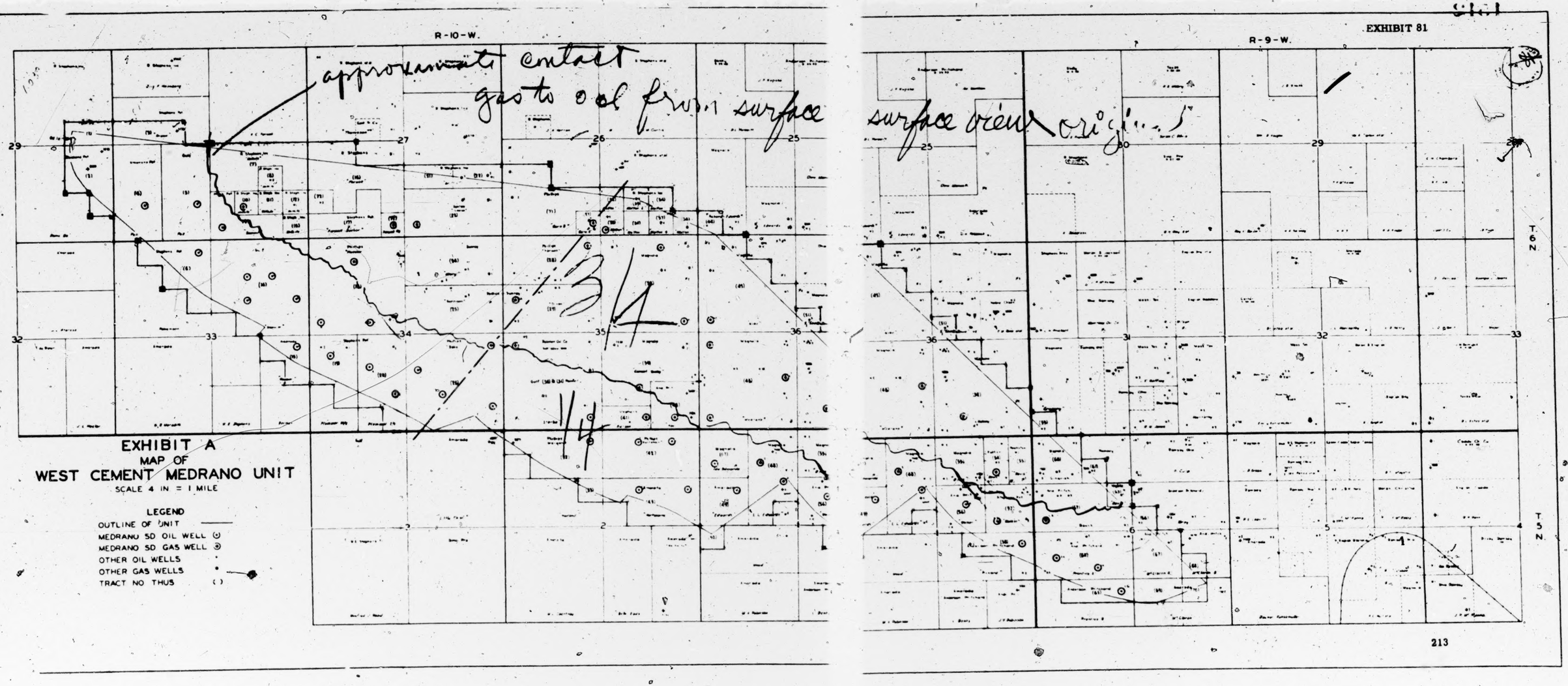
SUB-SEA DATUM ON THE TOP OF THE MEDRANO SAND

N

Page 175 of "Brief of Appellants. (See preceding microcard)

Exhibit 54.

EXHIBIT 81


R-10-W.
R-9-W.
approximate contact
gas to oil from surface
surface drainage original
T 6 N
T 5 N
29
27
26
25
32
33
34
35
36
2
1
6
5
4
EXHIBIT A
MAP OF
WEST CEMENT MEDRANO UNIT
SCALE 4 IN. = 1 MILE
LEGEND
OUTLINE OF UNIT
MEDRANO SD OIL WELL
MEDRANO SD GAS WELL
OTHER OIL WELLS
OTHER GAS WELLS
TRACT NO THUS

Company and others constituting the leases of record of more than 50% of the area overlying the Medrano Pool, a common source of supply of oil and gas, located in the West Cement Oil Field, Caddo County, Oklahoma, by filing a Petition with a "plan" attached with the Corporation Commission of the State of Oklahoma for the unitization of said common source of supply (R. 172 to 183).

A reproduction of a map of the area with ownership lines and designating various tracts by number appears opposite. (R. 1512 introduced R. 81—Exhibit 81)

The Oklahoma Corporation Commission is a constitutional body created by Article IX, Section 15, Oklahoma Constitution, and is given authority under Article IX, Section 19, Oklahoma Constitution of a court of record with certain powers therein stated and such additional powers and duties as may be prescribed by law. Title 52, O.S.A., Secs. 241 and 249 charge the Commission with the duty of enforcing the conservation of oil and gas and the prevention of waste thereof. The Commission is not a court of general jurisdiction.

The purpose of the proceeding, among other things, was to expunge the express and implied provisions of the 72 oil and gas leases (R. 1521, per September 7, 1951, Stipulation, R. 1535), covering the 72 severally owned tracts shown on the map insofar as they covered the said common source of supply and to create one oil and gas lease covering the entire common source of sup-

ply; to designate the operator thereof and define his authority over the property; to fix liability for the expenses incurred by the operator; and to divide the oil and gas produced by the operator among the former owners thereof and compensate the lessees for their wells and equipment so taken.

All of these appellants, except Mr. Kahle and Mr. Potter are lessors under the oil and gas leases involved (R. 1473-1474 introduced and stipulated R. 1196-1197). The land of some produced gas only from the common source of supply, the land of others produced oil only therefrom, the land of yet others produced both oil and gas therefrom, the land of still yet others produced nothing whatsoever therefrom, but did produce oil and gas from some other common source of supply, and others produced nothing from any common source of supply. Mr. Kahle owned an overriding royalty under one of the leases involved. Mr. Potter owned a lease with a gas well thereon (see division formula of "Plan," Exhibit 53, Tables 1; 2 and 3, R. 1484 to 1489), introduced R. 305).

The preceding facts appear from the stipulation of interest (R. 1473-1474, introduced R. 1196-1197), giving the name of each appellant lessor with his interest in the oil, gas and minerals set opposite by tracts. The tables attached to the plan showing the oil and gas under each tract and whether or not it is being produced—are said Exhibit 53. There is also set opposite each name the

number or numbers of the tracts as numbered on the map shown after the Appendix of the Brief. Exhibit 53 also shows the estimated amount of oil and gas under each numbered tract and whether or not wells have been drilled thereon, and whether they are oil or gas wells or combination wells and produce both.

The appellants appeared in the proceeding and leave having been granted filed their Answers (R. 815 to 825). The petitioners offered evidence establishing the 72 oil and gas leases (R. 1535, Stipulation of September 7, 1951), a representative copy of all of said leases per Stipulation of September 7, 1951, is set forth as follows:

> "Agreement, Made and entered into the 4th day of June, 1941, by and between Mrs. Margaret F. Holland, a widow, of Anadarko, Oklahoma, party of the first part, hereinafter called lessor (whether one or more) and Phillips Petroleum Company, part of the second part, hereinafter called lessee.
>
> "Witnesseth, That the said lessor, for and in consideration of One and no/100 Dollars, cash in hand paid, receipt of which is hereby acknowledged and of the covenants and agreements hereinafter contained on the part of lessee to be paid, kept and performed, has granted, demised, leased and let and by these presents does grant, demise, lease and let unto the said lessee, for the sole and only purpose of mining and operating for oil and gas, and laying pipe lines, and building tanks, power stations and structures thereon to produce, save and take care of said products, all certain tract of land situate in the County of Caddo, State of Oklahoma, described as follows, to-wit:
>
> N½ NW¼ (Lots 3 and 4), Section 2-5N-10W and containing 80 acres, more or less.

"It is agreed that this lease shall remain in force for a term ending August 6, 1946, and as long thereafter as oil or gas, or either of them, is produced from said land by the lessee, or the premises are being developed or operated.

"In consideration of the premises the said lessee covenants and agrees:

"1st. To deliver to the credit of lessor, free of cost, in the pipe line to which he may connect his wells, the equal one-eighth part of all oil produced and saved from the leased premises.

"2nd. To pay the lessor one-eighth value of gas from each well where gas only is found, while the same is being used off the premises, and lessor to have gas free of cost from any such well for all stoves and all inside lights in the principal dwelling house on said land during the same time by making his own connections with the wells at his own risk and expense.

"3rd. To pay lessor for gas produced from any oil well and used off the premises or for the manufacture of casinghead gasoline one-eighth, at the market price for the gas so used, for the time during which such gas shall be used, said payments to be made quarterly.

"If no well be commenced on said land on or before the 6th day of August, 1942, this lease shall terminate as to both parties unless the lessee on or before that date shall pay or tender to the lessor or to the lessor's credit in the Anadarko Bank and Trust Company, Bank at Anadarko, Oklahoma, or its successors, which shall continue as the depository regardless of changes in the ownership of said land, the sum of ($80.00) Eighty and no/100 Dollars, which shall operate as a rental and cover the privilege of deferring the commencement of a well for 12 months from said date. In like manner and upon like payments or tenders the commencement of a well

may be further deferred for like periods of the same number of months successively. And it is understood and agreed that the consideration first recited herein, the down payment, covers not only the privileges granted to the date when said first rental is payable as aforesaid, but also the lessee's option of extending that period as aforesaid, and any and all other rights conferred.

"Should the first well drilled on the above described land be a dry hole, then, and in that event, if a second well is not commenced on said land within twelve months from the expiration of the last rental period for which rental has been paid, this lease shall terminate as to both parties, unless the lessee on or before the expiration of said twelve months shall resume the payment of rentals in the same amount and in the same manner as hereinbefore provided. And it is agreed that upon the resumption of the payments of rentals, as above provided, that the last preceding paragraph hereof, governing the payment of rentals and the effect thereof, shall continue in force just as though there had been no interruption in the rental payments.

"If said lessor owns a less interest in the above described land than the entire and undivided fee simple estate therein, then the royalties and rentals herein provided shall be paid by the lessor only in the proportion which his interest bears to the whole and undivided fee.

"Lessee shall have the right to use, free of cost, gas, oil and water produced on said land for its opertions thereon, except water from wells of lessor.

"When requested by lessor, lessee shall bury its pipe lines below plow depth.

"No well shall be drilled nearer than 200 feet to the house or barn now on said premises, without the written consent of the lessor.

"Lessee shall pay for damages caused by its operations to growing crops on said land.

"Lessee shall have the right at any time to remove all machinery and fixtures placed on said premises, including the right to draw and remove casing.

"If the estate of either party hereto is assigned and the privilege of assigning in whole or in part is expressly allowed—the covenants hereof shall extend to their heirs, executors, administrators, successors or assigns, but no change in the ownership of the land or assignment of rentals or royalties shall be binding on the lessee until after the lessee has been furnished with a written transfer or assignment or a true copy thereof; and it is hereby agreed in the event this lease shall be assigned as to a part or as to parts of the above described lands and the assignee or assignees of such part or parts shall fail or make default in the payment of the proportionate part of the rents due from him or them, such default shall not operate to defeat or affect this lease insofar as it covers a part or parts of said lands upon which the said lessee or any assignee thereof shall make due payment of said rental.

"Lessor hereby warrants and agrees to defend the title to the lands herein described, and agrees that the lessee shall have the right at any time to redeem for lessor, by payment, any mortgages, taxes or other liens on the above described lands, in the event of default of payment by lessor, and be subrogated to the rights of the holder thereof, and lessor hereby agrees that any such payments made by the lessee for the lessor shall be deducted from any amounts of money which may become due the lessor under the terms of this lease.

"In Testimony Whereof, We Sign, this the 9th day of June, 1941.

MRS. MARGARET HOLLAND.

"State of Oklahoma, County of Caddo, SS:

"Be It Remembered, That on this 9th day of June in the year of our Lord one thousand nine hundred and forty-one, before me, a Notary Public, in and for said County and State, personally appeared Margaret F. Holland and to me known to be the identical person who executed the within and foregoing instrument and acknowledged to me that she executed the same as her free and voluntary act and deed for the uses and purposes therein set forth. In witness whereof, I have hereunto set my official signature and affixed my notarial seal the day and year first above written.

ROY H. HAWKINS,
Notary Public.

(Seal)

"My commission expires 10-26-42" (R. 1512, Stipulation, R. 1535).

Further evidence was offered substantiating the Petition and "Plan." The Corporation Commission entered Order No. 20289, granting the petitioners everything they asked for (R. 1239) as follows:

1. Express and implied covenants of the 72 oil and gas leases were expunged.

   The expunged covenants included:

   (a) Obligation of lessee to develop, to protect land against drainage and to market the production.

   (b) The term of the leases (the statute and order perpetuated the leases).

   (c) The royalty clause (the statute and order and petitioners "plan" arbitrarily fixed a new and different royalty).

2. Exclusive operation of the leases was delivered to Phillips Petroleum Company.

3. Liability for the expense incurred by the operator was saddled on each lease owner.
4. The oil and gas produced by the operator was divided among the former owners thereof according to the petitioners' "plan" and the statute.
5. The compensation for the wells and equipment taken was fixed according to the petitioners' "plan."

The appellants appealed from this Order to the Supreme Court of the State of Oklahoma on the ground that the Order and the Unitization Statute, Title 52, O.S.A., Secs. 286.1 to 286.17, upon which it is based unreasonably impair the appellants' contractual rights set forth in said leases and unreasonably take their property without due process of law or just compensation and unreasonably deny the equal protection of the laws to them, contrary to the United States Constitution.

The Supreme Court of Oklahoma held that there was no unreasonable or discriminatory use of the police power by the State in enacting the Unitization Statute or in entering the Corporation Commission Order No. 20289 complained of; nor did the procedure thereunder deny the appellants the equal protection of the laws; nor did the proceeding take their property without just compensation or due process of law.

From this decision the appellants have appealed here.

SUMMARY OF ARGUMENT

The case at Bar does not come within the rule laid down by this Court in the case of *Champlin Refining Co. v. Corporation Commission*, 286 U.S. 210; 52 S. Ct. 559, as follows:

> "Every person has the right to drill wells on his own land and take from the pools below all the gas and oil that he may reduce to possession including that coming from land belonging to others, but the right to take and thus acquire ownership is subject to the *reasonable exertion of the power* of the State to prevent unnecessary loss, destruction or waste."

The Unitization Act is an unreasonable exercise of police power by the State of Oklahoma.

It is unreasonable:

1. To impair contractual rights when unnecessary to accomplish the purpose for which the police power is being exercised. The contractual rights impaired are as follows:

   (a) Expungement of implied covenants of lease.

   (b) Change of stipulated royalty which is the principal moving consideration of the lease.

   (c) Extension of the agreed term of lease.

2. (If it is necessary to impair contractual rights), then it is unreasonable to deny due process of law to one whose property is taken and whose contractual rights are impaired. The due process denied follows:

   (a) A hearing denied lessors to determine whether or not they,

1. Are damaged by expungement of implied covenants of lease and if so, how much.
2. Are damaged by extension of the term of their leases and if so, how much.
3. Are entitled to an adjustment of their stipulated royalties because of the expungement of the implied covenants and extension of the term of the leases.

3. (If it is necessary to impair contractual rights), then it is unreasonable to deny equal protection of the laws to one whose property is taken and whose contractual rights are impaired. The discrimination practiced follows:

(a) The lessors are not allowed to,

1. Submit a plan for division of the oil and gas, nor
2. Defeat the plan of division by protest. Whereas, the lessees are given these rights and remedies.

ARGUMENT

The rights and properties of the appellant lessors involved in this appeal are evidenced by the representative oil and gas lease (R. 1521, Stipulation R. 1535) appearing at Page 19 of the Brief. The parties have stipulated that the said lease is representative of each lease between each appellant lessor and his separate lessee (R. 1535). The stipulation was made because the leases are practically identical in form and there were so many

leases introduced in evidence that it would have been extremely burdensome to the record, as well as, repetitious to have included all of them. It will be borne in mind that there were approximately 72 separate and distinct oil and gas leases involved, all of which were between different sets of parties.

The appellant lessors have certain definite rights and property and the lessees definite obligations under the terms of said leases. The leases have been construed and defined by the Oklahoma courts as to their nature and type, and rights and liabilities of the parties and definition of various terms. In order to better understand the rights of the appellant lessors, and obligations of the lessees we think that it is helpful to set out the various decisions of the Oklahoma courts construing the leases.

DEFINITION OF OIL AND GAS LEASE

"Under Oklahoma law, an 'oil and gas lease' is an 'incorporeal hereditament' or a 'profit *a prendre*,' and an 'interest' in real property."

United States v. *Stanolind Crude Oil Purchasing Co.* (Okl., C.C.A.), 113 F. 2d 194, Syl. 1.

LAWS APPLICABLE AND CONSTRUCTION

"Rights granted by oil and gas deeds and leases, made in Oklahoma, where property is situated, are to be determined by Oklahoma laws."

Crain v. *Pure Oil Co. et al.* (Okl., C.C.A.), 25 F. 2d 824. Syl. 2.

"Under the laws of Oklahoma, oil and gas leases should be construed most strongly against the lessees."

Crain v. *Pure Oil Co., supra*, Syl. 12.

"Under the laws of Oklahoma, oil and gas leases should be construed so as to promote development and prevent delay, where the terms thereof will permit it."

Crain v. *Pure Oil Co., supra*, Syl. 13.

"Oil and gas leases in this jurisdiction are construed strongly against the lessee, and in favor of the lessor, and where its terms will permit it under the rules of law, such lease will be construed so as to promote development and prevent delay."

Garfield Oil Co. v. *Champlin et al.*,
78 Okl. 92, Syl. 3.

"Where an oil and gas lease expressly provides that rights of parties shall terminate if no well be drilled within a fixed period unless the lessee on or before that date shall pay or tender to the lessor a fixed sum, time is of the essence of the contract."

Garfield Oil Co. v. *Champlin et al.*,
supra, Syl. 4.

"Under the decisions in this State, oil and gas, while in the earth, unlike solid minerals, are not subject to ownership distinct from the soil and the grant of the oil therefore is a grant, not of the oil that is in the ground, but of such a part as the grantee may find. An 'unless' lease is subject to termination at the will of the lessee, which privilege may be exercised by a mere failure to pay the stipulated rental at the time due, upon the happening of which the lease automatically terminates, and the

lessor cannot maintain an action against the lessee for rentals."

Garfield Oil Co. v. *Champlin et al.*, *supra*, Syl. 5.

CHARACTER OF CONTRACT

The representative oil and gas lease at Page 19 of the Brief is what is commonly termed by the courts an "unless" lease. The nature of the contract created by the "unless" lease is stated as follows:

"'Unless' lease is a valid mutual contract."

Brunson v. *Carter Oil Co.* (Okl., D.C.), 263 F. 935.

DEFINITIONS OF PARTICULAR TERMS USED IN LEASE

The terms "bonus," "royalty," "rental," and "working interest" are defined as follows:

"(a) 'Bonus' is said to mean a premium, paid to a grantor or vendor, and strictly as the cash consideration or down payment paid, or agreed to be paid, for the execution of an oil and gas lease.

"(b) The term 'rental,' as used in oil and gas leases, refers to the consideration paid to the lessor for the privilege of delaying drilling operations.

"(c) The term 'royalty,' in the strict sense, is held to mean a share of the product or proceeds therefrom, reserved to the owner for permitting another to use the property."

Hinkle et al. v. *Gauntt et al.*, 210 Okl. 434, 206 P. 2d 1001, Syl. 3.

"Working interest" is defined in *Lathrop* v. *Eyestone*, 170 Kan. 419, 227 P. 2d 136, 141, as follows:

"The lessee's interest in the oil produced, commonly seven-eighths or whatever the lease provides, is called the working interest."

RIGHTS AND LIABILITIES OF PARTIES UNDER LEASE

"Under the ordinary oil and gas lease, the lessee in developing the premises in the production of oil and gas is entitled to the possession and use of all that part of the leased premises reasonably necessary in producing and saving the oil and gas, including space to construct tanks and ponds, in which to confine salt water and other waste matter coming from the wells, and also including the space necessary to transport such waste matter from the wells into such tanks or ponds in a reasonably prudent manner."

Pure Oil Co. v. *Gear et al.*,
183 Okl. 489, Syl. 1.

"Neither party to the contract is the arbiter as to whether or not due diligence has been exercised to operate an oil and gas lease."

Patsy Oil & Gas Co. v. *Baker*,
127 Okl. 77, Syl. 3.

See:

Strange et al. v. *Hicks et al.*,
78 Okl. 1.

OBLIGATION FOR PAYMENT OF ROYALTY WHEN LEASE UNITIZED WITH ANOTHER

"Leaseholders of two separate tracts may unitize their working interests in their leases without consent of royalty holders, and in absence of consent by royalty holders their interests are not bound by unitization agreement."

Bruce v. *Ohio Oil Co. et al.*
(Okl., C.C.A.), 169 F. 2d 719, Syl. 3.

"If holder of two leases on two separately owned tracts unitizes them without consent of royalty owners and drills a single well upon one of tracts and produces gas under combined acreage through one well, royalty holders of tract on which well is located would receive all of royalty interest in entire production, and operator would become liable for an additional amount to royalty holders under other tract."

Bruce v. *Ohio Oil Co., et al., supra,* Syl. 4.

FAILURE TO PAY ROYALTY BY LESSEE CONSTITUTES A CONVERSION OF OIL

"When by the terms of an oil and gas lease, it is incumbent upon the lessee to deliver the lessor's share of the oil in the pipe line, and he fails to do so, and the lessor demands the delivery of the oil in the pipe line, settlement for the oil on the basis of its delivery in the pipe line, and the lessee fails, neglects, or refuses to deliver the lessor's share of the oil in the pipe line or make settlement on the basis of the oil delivered in the pipe line, this constitutes conversion of such oil by the lessee."

Clark v. *Slick Oil Co.*,
88 Okl. 55, Syl. 5.

TERM OF LEASE

"Lease for definite term and so long thereafter as oil is found in paying quantities *survives* definite term, if oil is then being produced in paying quantities, for so long as such production continues and terminates therewith; otherwise it expires within definite term, except where lessor has prevented such production."

Continental Oil Co. et al. v. *Osage Oil & Refining Co. et al.* (Okl., C.C.A.),
69 F. 2d 19, Syl. 1.

"Lessee remaining in possession after expiration of oil lease is tenant at will, and such tenancy may be terminated by either party on notice."

Continental Oil Co. et al. v. *Osage Oil & Refining Co. et al.*, *supra*, Syl. 2.

See, also:

United States v. *Brown et al.* (Okl., C.C.A.), 15 F. 2d 565, Syl. 2.

"The terms 'produced' and 'produced in paying quantities,' as used in an oil and gas lease for a given term and as much longer as oil or gas is produced or produced in paying quantities, have substantially the same meaning, and an oil and gas lease containing the following habendum clause: It is agreed that this lease shall remain in force for a term of five years from this date, and as long thereafter as oil or gas, or either of them, is produced from said land by the lessee,' expired five years from the date thereof unless oil or gas was produced in paying quantities from the leased premises."

Woodruff v. *Brady*, 181 Okl. 105, Syl. 1.

"Where an oil and gas mining lease is executed for a given term and as long thereafter as oil or gas is produced from the leased premises, if the lessee at any time subsequent to the expiration of the primary, or given, term, fail to produce oil or gas in paying quantities, except where production may be lessened by reason of a bona fide attempt to increase the same in existing wells, the lease will expire by its own terms."

Woodruff v. *Brady*, *supra*, Syl 2.

It will be noted from the above decisions that the lessor appellants, are under the terms of their respective leases entitled to ⅛th of the oil and gas produced from

their lands and that unless oil or gas is produced from the lands through a well drilled thereon within the primary term of years of the lease that said lease automatically expires either at the end of the term of years or upon sooner termination through failure to pay rentals. Under the terms of the lease the lessee is bound to drill a well on the lessor's premises, and produce oil or gas in paying quantities, or his lease will terminate and the oil, gas and mineral rights will revert to the lessor free of all rights of the lessee.

IMPLIED COVENANTS OF OIL AND GAS LEASES

In addition to the above expressed provisions of the oil and gas leases the courts have decreed certain implied covenants.

In the case of *Strange et al.* v. *Hicks et al.*, 78 Okl. 1, the court held:

Syl. 4:

"If an oil and gas lease does not expressly provide for the operation of the lease after the discovery of either oil or gas or both then there is an implied contract to exercise diligence, under the facts and circumstances of the case, to operate the same, thus making the lease remunerative to the parties to it."

Syl. 5:

"Neither party to the contract is the arbiter as to whether or not due diligence has been exercised to operate an oil and gas lease. If an oil and gas lease is not operated with due diligence under the facts and circumstances of the case, then a court, upon proper showing, may declare the lease forfeited."

In the case of *Pelham Petroleum Co.* v. *North*, 78 Okl. 39, the court held:

Syl. 4:

"Where the object of the operations contemplated by an oil and gas lease is to obtain a benefit or profit for both lessor and lessee, neither is, in the absence of a stipulation to that effect, the arbiter of the extent to which, or the diligence with which, the operations shall proceed; but both are bound by the standard of what, in the circumstances, would be reasonably expected of operators of ordinary prudence, having regard to the interests of both."

Syl. 5:

"A stipulation in an oil and gas lease whereby the lessee obligates itself 'to protect the side lines in case oil is found in paying quantities' imposes upon the lessee the same obligation to protect the lessor's land from actual or threatened drainage that the courts universally hold to be upon it in the absence of express stipulation to that effect."

In the case *Amerada Petroleum Corp. et al.* v. *Sledge*, 151 Okl. 160, the court held:

Syl. 1:

"The oil and gas lease in the case at bar was for a term of two years and as long thereafter as oil or gas was found in paying quantities. Lessee brought in a gas well which produced gas in paying quantities. There is an implied covenant that lessee should use reasonable diligence in further developing said property for oil and gas. The fact that one gas well was brought in on a tract of 110 acres will not relieve the lessee from further development, where the surrounding lands and surrounding development would require that a reasonably prudent person continue to develop said premises."

In the case of *Carter Oil Co.* v. *Mitchell* (Okl., C.C.A.), 100 F. 2d 950, the court held:

> "In order to comply with the implied covenants of a lease to drill off-set wells and to diligently develop the lease, a lessee must do that which, under the circumstances, an operator of ordinary prudence, having regard to the interests of both lessor and lessee, would do."

It appears that under the implied covenants of the oil and gas lease the lessee is required to make an outlay of substantial sums of money in order to hold the leased premises even though he has discovered oil and gas thereon and is producing the same in paying quantities. These covenants were established by the courts on the ground that the leases were mutual and that due regard should be given to the interests of both the lessor and the lessee and that neither the lessor nor the lessee was the sole arbiter as to how or when or the extent to which the leased premises were to be developed under the terms of the lease. In other words the courts hold that because the moving consideration for the lease is the royalty oil and gas produced that the lessor has some say as to how and when the lease shall be developed and the extent of the development thereof.

The Oklahoma Legislature made the Corporation Commission of Oklahoma the arbiter of the number or density of the wells required to be drilled to fully develop each producing oil sand or common source of supply by the enactment of the Well Spacing Act of 1935. Title 52,

O.S.A., Sec. 87.1 (Amended by Session Laws 1947, Page 328, Sec. 1). This Court passed upon the Act in the case of *Patterson* v. *Stanolind Oil & Gas Co. et al.*, 305 U.S. 376, 379, 83 L. ed. 231. It will be noted that the Act authorizes the Corporation Commission of Oklahoma to establish well spacing and drilling units of uniform size and shape [Sec. 87.1 (a)] and limits the size of the units to 40 acres in common sources of supply of oil above 9,990' deep [Sec. 87.1 (c)] and limits the wells thereon to one well [Sec. 87.1 (b) (1) second paragraph]. The Act also authorizes the Commission to require the owners of the lands within each unit to develop the same as a unit and to divide the royalty among the royalty owners [Sec. 87.1 (d)].

UNCONSTITUTIONAL SECTIONS OF UNITIZATION ACT POINTED OUT

It will be noted from the foregoing decisions of the Oklahoma courts that the implied covenants of oil and gas leases in Oklahoma have been long recognized by the courts and have become a rule of property. It will be also noted that the term clause of the leases has been definitely construed and fixed. The "unless" oil and gas lease automatically expires for failure to pay a rental when due—if the rentals are paid, the lease automatically expires at the end of the primary term, *unless* oil or gas is being produced in paying quantities—if oil or gas is being produced in paying quantities at the end of the

primary term, the lease automatically expires upon the failure of the lessee to produce oil or gas therefrom in paying quantities. It will be also noted that the royalty is the principal moving consideration for the lease and that the lessee's failures to pay the royalty provided in the lease constitutes a conversion of the royalty oil. It will also be noted that the courts have pointed to the royalty clause in establishing the implied covenants of the oil and gas leases and in determining that the "unless" lease is a *mutual lease* and that neither party to the lease is the arbiter as to the extent and manner of the development and management thereof. The courts of Oklahoma have always been the tribunals before which the lessors might bring the lessees for a determination as to how and when the lease should be developed and the manner and extent thereof. This was the situation of the lessors and lessees at the time of the passage of the Unitization Act by the Oklahoma Legislature.

It is apparent that the Act legislates away the property and contractual rights of the lessors. The royalty clause is legislated away by Sec. 286.4, Excerpt 2, Page 14 of the Brief, which provides for the filing of the Petition with a "plan" of unitization attached, and Sec. 286.5, Excerpt 3, Page 12 of the Brief, which states that the plan shall provide the division of interest of the unit production among the tracts within the unit area and Sec. 286.10, Par. 3, Excerpt 7, Page 14 of the Brief,

which provides that the production allotted to each tract and only that amount shall be distributed among the owners of the tract in the same proportions that they would have been shared had not the unit been organized, and Sec. 286.4, Excerpt 4, Page 12 of the Brief, which provides that the Commission shall enter an order creating a unit and approving a "plan" of unitization. In addition the statute further provides that the amount of production allocated to each *tract* and *only that amount* regardless of the actual production of oil and gas from the *tract* shall be considered the production from that *tract* and shall be distributed among the persons entitled thereto in the same proportions in which they would have shared had not the unit been organized. It will be observed from the above mentioned excerpt from the Unitization Act that only the majority lessees are permitted to file a "plan" and that the only method of division of the unit production is fixed by *that plan* which allots a certain percentage of the unit production to each tract. It will be pointed out by the respondents that the Unitization Act, Sec. 286.4, Excerpt 4, Page 12 of the Brief, provides that the unit shall be created upon such *terms and conditions* which are proper to protect and adjust the respective rights and obligations of the several persons affected including royalty owners and overriding royalty owners, as well as, lessees. It will probably be said that this clause gives the Corporation Commission jurisdiction and authority to adjust "rights"

between the lessors and the lessees. By "rights" it is meant the implied covenants of the lease, the term of the lease and the royalty provided therein. We ask that the Court note that the statute provides that the Order of the Commission shall be upon such "terms" and "conditions" as are proper to "protect" and "adjust" the "rights and obligations" of the lessors and lessees. We ask this Court to define and construe what is meant by that wording of the statute. The appellants contend that it has no force because, Sec. 286.10, Excerpt 7, Page 14 of the Brief, provides that the lessor shall receive no more than 1/8th of the unit production allotted to the tract which he owns. This clause of the Act precludes any adjustment between the lessor and lessee as to the royalty provided in the lease. The royalty, it will be borne in mind, is the principal moving consideration of the lease. The lessors now inquire, "what relief can the Corporation Commission give us under the statute? What terms or conditions can they add to the order which will adjust, the loss of the royalty, the term of our lease and the implied covenants thereof?" The appellants contend that the words "terms" and "conditions" are not sufficient in their scope and meaning to give authority to the Corporation Commission to render a money judgment, this being the only adjustment that could possibly be made between the lessors and the lessees, inasmuch as, the statute precludes an adjustment of the royalty provided in the leases. We submit that it is not sufficient,

particularly since the jurisdiction of the Commission is definitely limited by the Oklahoma Constitution and the statutes. The constitutional provision creating the Commission is hereinabove set forth showing that it is not a court of general jurisdiction; that its jurisdiction is limited to that fixed by the Oklahoma Constitution and granted by the Oklahoma Legislature.

It will also be noted that in addition to expunging the royalty clause that the Oklahoma Legislature by Sec. 286.10, Paragraph 4, Excerpt 7, Page 14 of the Brief, has stricken down and nullified the implied covenants of the oil and gas leases as well as the express covenants thereof, which include the *term* and *royalty* of the leases. The Act provides that operations carried on in accordance with the "plan" shall be considered a compliance with all of the provisions, covenants and conditions express or implied of the oil and gas leases and that wells drilled or operated on any part of the unit area no matter where located shall be regarded as wells drilled on each separately owned tract. It will be noted that the Legislature provided that any well which was *operated* on any part of the unit area would be regarded as a well *drilled* on each separately owned tract. In other words, if a well had already been drilled at the time the Unitization Act was passed by the Oklahoma Legislature still it would, under the Act, be considered as having been drilled on every tract included within the unit; so that the primary term of each undeveloped oil and gas lease

is actually extended by the Legislature the same as if the lessees had actually drilled a well on the land and obtained production of oil and gas therefrom. It will be observed from the map on Page 17 of the Brief and the Exhibit 81 (R. 1512), that there are numerous tracts included in the unit upon which no well has been drilled to the common source of supply in question and that some tracts are included upon which no well has been drilled to any common source of supply. The legislative Act therefore arbitrarily extends the term of the lessor's leases.

The same above referred to Section of the Act also relieves the lessees of their obligations under the implied covenants of the oil and gas lease. It will be noted that they are relieved of these obligations, provided their operations are carried on in accordance with the "plan" —and again we call the Court's attention to the fact that these same operators are the ones who have formulated and fixed the "plan."

The appellants contend that the expungement by the Oklahoma Legislature of the royalty clauses, the term clauses, and implied covenants of their leases is done without compensation, whatsoever. That under the Unitization Act the Corporation Commission of Oklahoma can not give the lessors any compensation or adjustment whatsoever. Incidentally this was the position the Corporation Commission took upon the trial and hearing.

The appellants contend that the Unitization Act fails to provide a forum for the determination of whether or not the lessors have suffered any damage, and if so, whether or not they are entitled to any compensation or adjustment for the loss of their rights and property.

The appellants further contend that it is apparent from the evidence and from the record of this case that in order to operate a common source of supply of oil and gas as a unit that it is not necessary to strike out either the royalty clause or the term clause or the implied covenants of the leases. This is undoubtedly a proper statement of the facts and the law for the reason that the State has as much right to regulate the operation for the production of oil and gas whether the ownership thereof is in the hands of the lessee as in the hands of the landowner; in other words the State can regulate and enforce unit operation of pools just as well, whether the land is leased or not. The perpetuation of the leases in the present lessees can certainly neither add to nor detract from the unit operation of the common source of supply. It will be argued no doubt by the respondents that huge and vast sums of money are required to operate a common source of supply and that somehow or other the lessees will have this great store of money, whereas the lessors will not. In this connection we call the Court's attention to the fact that there are poor lessees the same as there are poor lessors and that there are rich lessors, as well as rich lessees. We also wish the Court to note

that if the enterprise is at all profitable that there will be no lack of new lessees with capital to take over in the event any of the oil lessees become discouraged and let their leases expire by their own terms either express or implied.

PORTIONS OF THE ORDER OF THE OKLAHOMA CORPORATION COMMISSION VIOLATIVE OF THE UNITED STATES CONSTITUTION

We call the Court's attention to Order No. 20289, of the Corporation Commission of Oklahoma (R. 1239) and particularly to Paragraphs 3, 4 and 5 of the Findings. The Commission found that the unit area consisted of approximately 3700 acres of land; that there were 37 oil wells and 19 gas wells producing from the Medrano Pool; that the lands embraced in the Unit Area were divided into a large number of individual tracts of various size and shape and owned in severalty by a large number of different individuals.

In Paragraph 6, the Commission found that under present competitive methods of operation, treating each tract or lease as a separate operating unit; that there has been and still continues to be wasteful utilization and dissipation of the gas energy in the Medrano Pool to the detriment and injury of the pool as a whole. In connection with this finding we call the Court's attention to the fact that during the hearing of this case before the Commission that an order was entered by the Commis-

sion shutting down every gas well in the Medrano Pool. This order appears at Page 1239 of the record. The gas wells in the pool were actually shut down from the date of the said order and have been shut down ever since. We ask that this Court consider these facts in connection with the above finding of the Commission. We also call the Court's attention to the fact that the finding on dissipation of gas energy appears to be the only practice constituting waste, the prevention of which would result in the conservation of oil and gas as found by the Commission. The Commission further found in Paragraph 6, that to permit the owners of gas wells and high gas-oil ratio wells to continue to produce will result in robbing the oil wells of gas energy required to produce the oil; and that to shut in the said wells would deprive the owners thereof of their fair share of the production from the pool. That it is desirable to return to the reservoir the gas produced from the oil wells to supplement the remaining natural gas energy in the pool and retard the decline of reservoir pressure and aid in a water flooding program to be introduced at a later time. That such gas recycling and water injection in the pool can not be done practically without the control of the entire reservoir.

Paragraph 7, of the findings is a reiteration of the statements of Paragraph 6. It is quite apparent that the above practices can be conduced by a unitization of the leases without affecting the royalty clauses, term clauses, or implied covenants thereof. The royalty can very

easily be measured as it is produced from the wells. In the event it is desirable to shut down the production of gas on some leases, then under the law in Oklahoma the lessee may pay "off-set royalty" and continue the primary term of his lease or he may drill a well and thus perpetuate his lease beyond the primary term and still pay "off-set royalty."

Citing:

As to whether or not the implied covenants are satisfied by paying "off-set royalty" is a matter that has long been determined by the Oklahoma courts.

In connection with the loss of the implied covenants of their leases by the lessors, we have said that the lessees have been relieved of heavy development burdens to the lessors, which is not necessary to enforce compulsory unitization of oil and gas pools. The respondents will probably say that the additional cost of applying unitized methods of production such as gas recycling and water flooding will equal the value of the additional oil recovered plus the money saved by the lessees by reason of relief from their heavy drilling obligations. This argument by the respondents is negatived in Paragraph 9 of the Commission's findings. The Commission found that, the estimated additional cost of conducting the recycling and water flooding operations will not exceed the value of the additional oil and gas so recovered. It will be noted that under this finding the drilling cost, from which the lessees have been relieved, is pure profit to

them. We hope the Court will bear this in mind in considering the lessors' loss of their implied covenants by operation of the Unitization Act (Sec. 286.10, Paragraph 4, Excerpt 7, Page ___ of the Brief).

In Paragraph 11, the Commission found that the Plan of Unitization is fair, reasonable and equitable and contains all the terms, provisions, conditions and requirements reasonably necessary and proper to protect, safeguard and adjust the respective rights and obligations of the several persons affected, including royalty owners, as well as, the lessees, and *as will effectuate and accomplish the purposes of the Unitization Act;* that the division of interest set forth in Exhibit B, to the "plan" is fair and equitable and will permit persons to receive their fair and equitable share of the unit production; that the division of interest is fair and reasonably representative of the value of said several tracts for oil and gas purposes; that the taking over and using of the wells and equipment and the compensation therefor are fair, reasonable and equitable. We again call the Court's attention to the fact that the Commission's findings, as to the adjustment of the respective rights and obligations between the royalty owners and the lessees, are qualified by the further finding that said findings are such as will *effectuate and accomplish the purposes of the Unitization Act.* It will be borne in mind that the Unitization Act permits no adjustment of royalty as between the lessor and lessee and also makes no provision for money judg-

ment, so that, although, it may appear from a casual reading of the statute and the Commission's findings that a fair and equitable adjustment has been made between the lessors and the lessees, still, upon a more careful reading of the statute and the findings, it is apparent that no adjustment, whatsoever, has been made. It will be further noted that the Commission's findings that the division of interest as set forth in Exhibit B, of the "plan" are fair and equitable. This may be true but there is no finding that such a division is necessary to the unit operation of the pool, nor is such a finding required by the statute. But it should be. The appellants contend that just because a division is fair and equitable that the same is not necessarily justified and that persons should be secure in their property, unless it is necessary to take the same under some reasonable exercise of the police power. The fact that the accounting for the oil and gas produced under unit operation is simplified by nullifying the royalty clause, the term clause and implied covenants of the appellants' leases, certainly contributes in no way to gas recycling or water flooding in connection with the recovery of oil and gas.

The Order of the Commission is in comparison with the findings, very brief. It grants the Petition, approves the creation of the unit, defines the area and approves the "plan" and makes it a part of the order. In this connection we call the Court's attention to the fact that the Unitization Statute requires that the Commission make

such an order and gives it no alternative (Sec. 286.4. first paragraph, Excerpt 4, Page 12 of the Brief).

The Commission retains continuing jurisdiction over the operations carried on by the unit to the same extent as it would have jurisdiction over any other lessee or person producing oil or gas from the Medrano Pool in the absence of the unitization. We frankly admit that we do not know what this part of the order means but we doubt that the Commission is authorized by any statute of Oklahoma to make any change in the division of interest and fixing of rights of the parties as set forth in the Plan of Unitization. We have made a diligent search of the statutes and fail to find any clause in any statute of Oklahoma, which would authorize the Commission to make any adjustment between the lessors and the lessees.

PORTIONS OF THE OPINIONS OF THE SUPREME COURT OF OKLAHOMA VIOLATIVE OF THE UNITED STATES CONSTITUTION

The decision of the Supreme Court of the State of Oklahoma, in *Palmer Oil Corp. et al.* v. *Phillips Petroleum Co. et al.*, 204 Okl. 543, 558, violates the above mentioned Sections of the United States Constitution. The second syllabus of the said opinion reads as follows:

> "The police power of the State extends to defining the correlative rights of owners in a common source of oil and gas supply, providing for the management, operation and further development of such

common source of supply and distributing the proceeds thereof among those entitled thereto."

We call the Court's attention to the absence of a qualifying clause in the statement of law in Syllabus 2. There should be added to said syllabus, the following:

"Provided, however that no contractual rights shall be impaired unless it is reasonably necessary to the management, operation and development of said common source of supply and distributing the proceeds thereof."

Syllabus 4 of the opinion reads as follows:

"The Unitization Act does not involve any unconstitutional delegation of legislative power by the provision which requires the petition of lessees of record of more than fifty per cent of the area of the common source of supply in order to give the Commission jurisdiction under the Act."

The appellants contend the above statement of the law should be modified by a clause as follows:

"Provided, however, that in the event the petition of the lessees involves impairment of the contractual rights of the lessors that unless such Act permits the filing of a petition and a plan of division said rights by the lessors of record of *more* than 50% of the area, said Unitization Act will deny to the lessors the equal protection of the laws."

The appellants contend that the fact that the Unitization Act permits the majority lessees to file a petition and plan, does in itself not involve an unconstitutional delegation of legislative power. The unconstitutional delegation of legislative and judicial power arises by the Act permitting the lessees to arbitrarily fix the lessors'

royalty and annul the term and implied covenants of the leases. It could not make any difference whether the Act required only one lessee or all of the lessees to join in the Petition as far as delegation of legislative or judicial power is concerned. The proposition of permitting the lessees to Petition and nullify the lessors' rights without giving the lessors the same privilege violates the unequal protection of laws clause. The unconstitutional delegation of legislative and judicial power goes to that portion of the Act permitting the lessees to nullify the lessors' contractual rights by their sole and arbitrary action and setting up the Corporation Commission as a "stalking horse," as it were, with no alternative but to approve the nullification of the lessors' rights by the lessees' so-called "plan" and the action of the Act itself. We are of the opinion that this is more a delegation of judicial than legislative power and so argued to the State court.

The opinion in Oklahoma Report 204, Page 547, states:

> "Therefore, it necessarily follows that the contention challenges the authority of the Legislature in dealing with matters of policy, which is a realm that is without the scope of judicial inquiry."

This conclusion was based upon two premises that were not at all contended for by the lessors. The said conclusion is later used in the opinion to answer the contention of the lessors that the nullification of the lessors' rights by the lessees' "plan" and the Act, itself, is an

unauthorized delegation of legislative and judicial power. On Page 549, the opinion states:

> "It was within the power of the Legislature to do so because being within its police power to enact the law without the consent of either lessees or royalty owners it was optional with it to require the consent of either. Where privilege is granted to some in such situation the Constitution is satisfied if all similarly situated are treated alike."

The appellants take issue with this statement of the law, as applicable to the case at Bar, in that, the result of the operation of the Petition, and "plan" and the action of the Unitization Act, itself, are to nullify a contract between the lessors and the lessees. It certainly can not be held constitutional to grant a privilege, *i.e.*, filing the "plan" of division, to one contracting party as against another especially when the privilege granted is to nullify the contract itself even if such nullification is required in the necessary and reasonable exercise of the police power, which in this case we do not, by any matter of means, admit. The appellants also contend that the statement of the Oklahoma court above quoted to the effect that since the Legislature could enact the law without the consent of the lessees or lessors that it could require the consent of either, is not substantial reasoning. It is not difficult to get the consent of a lessee to a proceeding that will relieve him of his contractual obligations and rewrite the contract to his heart's desire and at the same time gag and bind his opposing contracting

party. A reading of the excerpts from the Unitization Act and of the findings of the Corporation Commission and of the "plan" clearly and definitely bears out the above statement. If the Legislature had seen fit to require only the consent of the lessors to the activation of the Unitization Act, it is not difficult to discern that the Act would never have been activated. It is true that the lessors have no active part whatsoever, in the gas recycling or water flooding contemplated by the exercise of the Unitization Act, but, on the other hand their royalty rights, lease term rights, and implied covenants are in no way contractually sufficient to prohibit the unit operation of the common source of supply by the voluntary or compulsory joint action of the lessees. We submit that the above quoted conclusions reached by the Oklahoma court are beside the point and beg the question. Again on Page 550 of the opinion the Oklahoma court quotes from the case of *Field* v. *Barber Asphalt Paving Co.*, 194 U.S. 618, 24 S. Ct. 784, 48 L. ed. 1142, in part as follows:

> "The provision in the Federal Constitution is satisfied if all persons similarly situated are treated alike in privileges conferred or liabilities imposed."

This case dealt with an improvement ordinance that made a distinction between majority resident owners and non-resident owners. This case is clearly distinguished from the case at Bar by the facts. Surely it can not be said that the same privileges are conferred on the lessees

or that the liabilities are the same. The lessors and lessees are parties to the same contract and when a privilege is conferred on one it is to the detriment of the other and vice versa as to liabilities or the relief therefrom.

The Oklahoma court again on Page 550 said:

> "Such rights have been so committed in reliance upon the ability of the lessees to produce. Neither the fact of nor the amount of the royalty interest presents any problem for solution in establishing unification because same is recognized and fixed by the law."

The rights referred to by the court in the above quotation are the rights to explore, develop, produce and market oil and gas from the various tracts of land. The appellants take issue with the court's statement that they made their leases in reliance upon the ability of the lessees to produce. No doubt the lessees will so contend in their Brief and in their argument, however, it will be noted from the decisions of the courts in establishing the implied covenants of the leases requiring the lessee to fully develop and protect the lands against drainage, that if the lessee did not develop and produce, that his lease became forfeited or was terminated by the express provisions thereof. There is no evidence in this record and there is no provision in the leases to the effect that the moving consideration for the lease is the lessee's ability to produce. The lessee is either required to produce or his lease terminates and the lessor does not have to rely on the lessee's ability. If the lessee does not have the

ability to produce, the lease terminates according to its own terms and the lessor is at liberty to lease his lands again or operate thereon himself. These statements are borne out by the terms of the leases themselves, as well as, the decisions of the Oklahoma courts hereinabove cited. The statement of the Oklahoma court that neither the fact nor the amount of royalty interest presents any problem for solution in establishing unification because the same is fixed by law, causes the appellants great concern for their rights. In the first place the royalty is not fixed by law but is fixed by private contract by the parties as appears from the leases themselves. The Unitization Act attempts to nullify the private contract and to fix the royalty by law, which the appellants believe presents a serious question and is their reason for being before this Court.

Again on Page 550 the Oklahoma court said:

> "By reason of their responsibility the lessees have an interest that is distinctive from that of the royalty owners but it is not adverse thereto because the interests of the latter are dependent upon and must rise or fall with that of the lessees."

The responsibility of the lessees above mentioned is the development of the property and the production of oil and gas therefrom. No doubt the lessees will strongly contend that the above statement of fact by the Oklahoma court is correct, however, the appellants again call the Court's attention to the terms of the leases themselves and of the Oklahoma decisions construing the

same. The appellants submit to the Court that if the lessees' interests had not been adverse to the lessors' interests that the doctrine of implied covenants of oil and gas leases would never have been established. Under the doctrine of implied covenants, one operator must operate as diligently as another; the ability of the operator is not a matter for consideration. Regardless of his ability he must operate in accordance with the covenants, express and implied, of his lease or his lease will terminate. The proponents of the Unitization Act desire that the above statement of the Oklahoma courts may be made true by the decisions of this Court and the appellants in defense can only point to their written contracts and the rules of property construing them. Again the appellants wish to make their position clear to this Court and say that they do not seek the right to engage in the operation of the leases or in the unitized operation of the pool. That is the province of the lessee. But they do object to the nullification of their contracts when such nullification is not necessary in any way to further the unit operation and development of the various leases overlying the Medrano Pool.

On Page 551 the Oklahoma court discussed the Section of the Unitization Statute which limited the royalty to 1/8th of the production attributed by the "plan" to each separate tract and we quote a portion thereof, as follows:

"The importance of the segregation of a definite amount of the total production as royalty is manifest and it is further attested by the fact it is made an integral part of all leases where the cost of operation is to be borne by the lessee. It follows that such segregation is as fully important where the operation is unitized and operated as one lease. In such situation the question is whether the proportion of the production to be regarded as royalty is reasonable. The amount thereof is not called in question so far as the same affords the basis of the unit operation, but it is held that the effect thereof is to impose an unlawful burden on any royalty interest in excess of the one-eighth, if such there be. Considering, as we must, that the one-eighth royalty prescribed is reasonable to accomplish the overall purpose, it follows that the right to the exceptional royalty as such must yield to the extent it militates against the plan but should be preserved to the extent it may be done consistently with such plan. We hold that the Act gives full recognition to such right and only varies the method prescribed in the lease for its enjoyment."

We suggest in answer to the above quoted portion of the opinion that, in the event, the lessee failed to pay the royalty stipulated in the oil and gas lease that, then, the lessors would have an action against the lessee for the conversion of oil by the lessee or, in the event, the lessee's share of the unit cost of operation exceeded the amount of the royalty provided in the lease, that, then and in that event, the lease would terminate by its own terms and the landowner would stand in the shoes of the former lessee.

Of course the appellants contend that the dissenting opinions of the Oklahoma court minority state the cor-

rect rule. The appellants see no need to discuss or amplify the dissenting opinions but adopt them in their entirety.

IMPLIED COVENANTS

(a) Well Spacing Act distinguished from Unitization Act.

The Well Spacing Act is distinguished from the Unitization Act in that the Commission determines the shape and size of the drilling units and the location at which each unit well is to be drilled and also adjusts the correlative rights of the parties in accordance with the evidence in each particular case.

Under the Unitization Act the area to be unitized, the number of wells to be drilled into the entire common source of supply and the location thereof and the division of oil and gas among the parties entitled thereto and the compensation of the lessees for their wells and equipment is fixed by the petitioners.

Under the Well Spacing Act the royalty is divided among the land owners as their interest bears to the whole which the court has held to be equitable since only one well is drilled on the unit. To the contrary under the Unitization Statute the royalty is arbitrarily fixed at an 1/8th part of the oil attributable to the particular tract owned by the land owner, and no court is allowed to determine whether or not the lessor is entitled to any

adjustment of his royalty interest by reason of the loss of beneficial and valuable terms of his lease contract. Also the Unitization Act relieves the lessees of their burden under the express and implied covenants of the lease to drill a well on each drilling unit, and permits them to drill as many or as few wells as they desire, thereby relieving the lessee of great financial burdens. The usual 1/8th royalty has been fixed at 1/8th because the lessees are obligated under the implied covenant to fully develop the land; *i.e.*, to drill one well on each spacing unit. When the lessee is relieved of this heavy drilling obligation the lessor should be compensated and if the parties were in the same position as they were before the lease was made, the amount of the royalty would probably be increased in such cases.

The evidence in the case at Bar discloses that the appellant lessors at the time of the filing of the Petition for unitization were entitled under the implied covenants of their leases to have many additional wells drilled on their lands (R. 933-934). The respondents' expert witnesses testified that the field should be developed on a basis of one well to 20 acres (R. 535). The map at Page 17 of the Brief shows that the respondents were obligated to drill many additional wells on the various leases in order to fully develop the leases on a basis of one well to 20 acres. As a matter of fact ten-acre spacing applied to the field at the time the Petition was filed (R. 538). This onerous obligation was also upon the

shoulders of the respondents when the Unitization Act was first enacted, as well as, at the time the Petition for Unitization was filed (R. 538). We call the Court's attention to the fact that the restrictions against drilling oil wells imposed by the Petroleum Administration for War during World War II had been relaxed for only a short time before the Petition for Unitization was filed so that the various lessors had not had much time to assert their rights for additional development of their respective leases.

Order No. 20289 of the Commission relieved the respondents of these heavy drilling obligations which added nothing to the conservation of oil and gas or to the unit operation of the pool, but did save the lessee a lot of money. We call the Court's attention to the fact that under Order No. 20289 of the Commission and under the Unitization Act the lessors received no compensation or remuneration in damages of any kind for the relief of the lessees from these drilling obligations. If the respondents had been required by the Unitization Act to submit the 1/8th royalty clause of their leases to the Corporation Commission for adjustment and the royalty owners had been allowed under the Act to appear and offer their evidence in support of an increase of their royalty or to show the amount of this damage resulting from the relief of the lessees from their drilling obligations, they would have at least had a day in court. The question of fact as to whether or not the lessors

had been damaged or were entitled to some compensation or adjustment of their royalty interest has never been determined by any court and cannot be under the Unitization Act. The findings of the Commission in Paragraph 9 of the order are that the additional cost of unit operation will not exceed the value of the additional oil and gas so recovered. Thus the due process clause is violated. In fact the Act precludes the royalty owners from an adjudication of any kind of their damage for the loss of their valuable rights as aforesaid (Title 52, O.S.A., Sec. 286.10, Paragraph 3, Excerpt 7, Page 14 of the Brief). If the question could have been adjudicated under the Act it could have resulted in an increase in the royalties agreed upon by the lessors and the lessees or it may have resulted as it has. However, the lessees contend that they have a right under the Constitution of the United States to have a court of competent jurisdiction pass upon the facts and determine whether or not they are entitled to any damage or adjustment and if so how much.

At the time the leases were made the parties contemplated that the lessees would develop the leases under existing law which called for one well to each 10-acre tract or one well to each such spacing unit as the Commission might order under the Well Spacing Act not to exceed 40-acre units. Such facts warranted a royalty of 1/8th and the lessors leased their lands accordingly. How, however, if it had been within the contemplation of the

parties at the time the leases were made that the lessees would have been relieved of the ordinary and customary drilling obligations for the full development of the lease, the royalty could well have been substantially increased.

The same situation exists as to the so-called "edge leases" appearing on the map at the back of the Brief. These "edge leases" lie at the edges of the common source of supply and are only small areas—possibly 10 acres—and overlie the common source of supply as shown by the map. The "edge lessees" were obligated to drill off-set wells on the edge tracts in order to hold their leases (R. 176), under the law in force at the time the leases were made. The Commission by Order No. 20289 relieved the lessees of this onerous obligation without determining whether or not the lessors should be compensated therefore. The Commission could do nothing else since the Unitization Statute, prohibits any adjustment of correlative rights between the lessors and lessees (see Sec. 286.10, Par. 3). The lessors have no right to such a hearing under the Unitization Act.

We submit that in order to operate a common source of supply of oil and gas as a unit that it is not necessary to deprive the lessors of their contractual rights. In the event the lessors' contracts with the lessees become forfeited or terminate for failure to comply with the expressed or implied covenants of the lease such as the failure to develop, protect the premises from drainage or failure to drill within the primary term, the lessor should

have his remedy at law or in equity or either cancel the lease or quiet his title against the lessee, and have his land free of the lease. In such event the lessor would immediately stand in the lessee's shoes, thus in no way affecting the unit operation any more than a transfer of interest by a lessee. The fact that the lessor has entered into an advantageous contract with the lessee is a very good reason to prohibit the lessee from escaping therefrom by an Act of the Legislature cancelling the onerous portion of his contract in the name of conservation of oil and gas when the cancellation of such onerous burden in no way tends to conserve oil or gas. Or if such cancellation does conserve oil or gas which the appellants do not admit and the obligation should be cancelled, still the lessor should not be precluded from a judicial determination as to whether or not he is entitled to an adjustment of his relative rights with the lessee and if so, what?

The case of *Patterson* v. *Stanolind Oil & Gas Co.*, 305 U.S. 378, 380, 83 L. ed. 233, held constitutional the Oklahoma Well Spacing Act (Okla. Session Laws 1935, Chap. 59: Amended Laws 1947, Sec. 1—Title 52, O.S.A. 87.1). This case can be distinguished from the case at Bar on every point herein contended for. In dismissing the appeal for failure of the plaintiff to raise a substantial question this Court said:

> "It is admitted that the Commission made its findings and order after due hearing. The evidence underlying its findings is not in the record. Accord-

> ingly, as the State court said, it must be assumed 'that the source of supply of the well in question is common to the land adjoining it and that said pool underlies not only the 6¼ acres of land on which the well is located but that it also extends beneath the 3¾ acre tract.' In that view the State court applied well settled principles in denying plaintiff's contention under the Fourteenth Amendment."

It will be noted that in the *Stanolind case* it was admitted by the parties that the statute provided for an adjustment of the correlative rights of the parties and that the order complained of was made after hearing thereon. It will also be noted that the evidence underlying the order was not in the record of the case. Whereas, in the case at Bar the Unitization Act expressly prohibits the Commission from adjusting any rights whatsoever between the lessor and lessee and establishes a new contract between the parties and arbitrarily fixes the lessors' royalty without provision for a hearing or an adjudication of any kind (Sec. 286.10, third paragraph, Excerpt 7, Page 14 of the Brief). In addition—the undisputed evidence in the case at Bar disclosed that the lessees had onerous drilling obligations under their leases (R. 934) from which they were relieved by the Unitization Act and Order No. 20289 of the Commission (see Sec. 286.10, Paragraph 4 of the Statute). The Oklahoma Supreme Court in *Palmer Oil Corp.* v. *Phillips Petroleum Co.*, 204 Okl. 550, said as follows:

> "Neither the fact nor the amount of the royalty interest presents any problem for solution in estab-

lishing unitization because the same is recognized and fixed by the law."

We respectfully submit to this Court that the amount of the lessors' royalty in an oil and gas lease is fixed by the private agreement of the parties as set out in the written lease contract. The Oklahoma court failed to otherwise pass upon the lessors' loss of the express and implied covenants of their leases.

It was argued to the Oklahoma Supreme Court that if the destruction of the lessors' rights will not reasonably assist in the accomplishment of the purpose for which the exercise of the police power by the State is authorized or permitted under the United States Constitution, namely and to-wit: the conservation of oil and gas and prevention of waste, then and in that event, the application of the police power is unreasonable and foolish as can easily be seen by the application of simple logic. The evidence of the respondents opines (R. 254) that 50% more oil will be recovered under unit operation than under former methods and that the cost of development will be greatly reduced by reason of the lessees being relieved of onerous drilling obligations placed upon them by the implied covenants of the leases. We will for the purpose of argument admit that this is true since the Corporation Commission so found from the evidence offered by the petitioners and the Supreme Court of Oklahoma so sustained. Considering this proof and these facts, how, now, can the respondents contend

that they did not receive great profit in money under Order No. 20289 of the Commission by reason of their being relieved from their onerous drilling obligations to the lessors? If the lessees do receive such profit and benefit from the order then the lessors, surely, are entitled to some compensation or damage for the lessees' relief from their onerous drilling obligations and if so, how much, rather than have the same arbitrarily fixed at 1/8th of the unit production attributed by the lessees to their land.

ROYALTY CLAUSE AND TERM OF LEASES

Returning again to the dicta of the Oklahoma court in which they said the 1/8th royalty is fixed by law. It is true that the royalty is usually 1/8th part of the oil and gas produced by there are many oil and gas leases in Oklahoma and other States that bear a greater royalty than 1/8th of the oil and gas. The only statute in Oklahoma which attempts to fix the royalty between the lessor and the lessee is the Unitization Statute which we are attacking as unconstitutional. It is true that for the purpose of operating a common source of supply of oil and gas as a unit that 1/8th of the production thereof may be set aside and not used to defray the expense of operation and this can be done without impairing the contract between the lessors and the lessees. For instance, if an oil and gas lease bearing a royalty of 1/4th of the oil and gas produced became a part of a unit operation of a common source of supply and the expense of the operation became so great that it required more than the

value of ¾ ths of the oil and gas produced to operate the unit, the lessee might then, at his option and under his private contract pay the lessor the difference and maintain his lease in force; or he might surrender his lease saying that the same is terminated for the reason that oil and gas is not being produced in paying quantities to the lessee, in which event the lessor would then immediately step into the lessee's shoes, insofar as, the unit operation is concerned and would pay his part of the cost of operation and would receive the part of the oil and gas assigned to his land. It is apparent that the Unitization Act, in the name of the conservation of oil and gas and unit operation of pools, extends the term of the leases to the detriment of the lessors and overriding royalty owners which in no way furthers the conservation of oil and gas or the unit operation of common sources of supply thereof.

CONCLUSION

For the reasons stated it is respectfully submitted that the Judgment of the court below should be reversed.

Respectfully submitted,

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APRIL, 1952.

APPENDIX

THE STATUTE OF THE STATE THE VALIDITY OF WHICH IS INVOLVED

"UNITIZED MANAGEMENT OF COMMON SOURCES OF SUPPLY

"#286.1. LEGISLATIVE DECLARATION.

"The Legislature finds and determines that it is desirable and necessary, under the circumstances and for the purposes hereinafter set out, to authorize and provide for unitized management, operation and further development of the oil and gas properties to which this Act[1] is applicable, to the end that a greater ultimate recovery of oil and gas may be had therefrom, waste prevented, and the correlative rights of the owners in a fuller and more beneficial enjoyment of the oil and gas rights, protected. Laws 1945, p. 162, #1.

"#286.2. COMMON SOURCES OF SUPPLY TO WHICH ACT IS APPLICABLE.

"This Act[1] shall apply only to common sources of supply of oil, oil and gas or gas distillate in this State.

"The provisions of this Act shall not apply to any common source of supply of oil, oil and gas, or gas distillate or any part or parts thereof which at the effective date of this Act are being operated by or under pressure maintenance, repressuring, or secondary recovery methods or operations, provided, that nothing contained in this Act shall prevent the voluntary inclusion and extension of areas in which are located such existing pressure maintenance, re-

1 Sections 286.1-286.17 of this title.

pressuring, or secondary recovery methods or operations as unit areas under the provisions of this Act. Provided this Act shall not apply to any field where the discovery well has been drilled twenty (20) years prior to the effective date of this Act. Laws 1945, p. 162, #2.

"#286.3. JURISDICTION OF CORPORATION COMMISSION.

"Subject to the limitations of this Act[1] the Corporation Commission of the State of Oklahoma, hereinafter referred to as the 'Commission,' is hereby vested with Jurisdiction, power and authority, and it shall be its duty, to supervise the administration of this Act. Laws 1945, p. 163, #3.

"#286.4. THE PETITION FOR AND ORDER CREATING UNIT.

"If upon the filing of a petition therefor and after notice and hearing, all in the form and manner and in accordance with the procedure and requirements hereinafter provided, the Commission shall find (a) that the unitized management, operation and further development of a common source of supply of oil and gas or portion thereof is reasonably necessary in order to effectively carry on pressure-maintenance or repressuring operations, cycling operations, water flooding operations, or any combination thereof, or any other form of joint effort calculated to substantially increase the ultimate recovery of oil and gas from the common source of supply; and (b) that one or more of said unitized methods of operation as applied to such common source of supply or portion thereof are feasible, will prevent waste and will with reasonable probability result in the increased recovery of substantially more oil and gas from the common source of supply than would otherwise be recovered; and (c) that the estimated

1 Sections 286.1-286.17 of this title

additional cost, if any, of conducting such operations will not exceed the value of the additional oil and gas so recovered; and (d) that such unitization and adoption of one or more of such unitized methods of operation is for the common good and will result in the general advantage of the owners of the oil and gas rights within the common source of supply or portion thereof directly affected, it shall make a finding to that effect and enter an order approving the creation of a unit composed of the lessees and other persons who under the plan of unitization approved by the Commission are chargeable with the responsibility and cost of contracting such unitized methods of operation, development of the common source of supply or portion thereof described in the order, all upon such terms and conditions, as may be shown by the evidence to be fair, reasonable, equitable and which are necessary or proper to protect, safeguard, and adjust the respective rights and obligations of the several persons affected, including royalty owners, owners of overriding royalties, oil and gas payments, carried interests, mortgages, lien claimants and others, as well as the lessees. To give the Commission jurisdiction hereunder, the petition shall be filed by, or with the authority of, lessees of record of fifty per cent (50% or more of the area of the common source of supply or portion thereof sought to be unitized. The petition shall set forth a description of the proposed unit area with a map or plat thereof attached, must allege the existence of the facts required to be found by the Commission as hereinabove provided and shall have attached thereto a recommended plan of unitization applicable to such proposed unit area and which the petitioners consider to be fair, reasonable and equitable. Laws 1945, p. 163, #4.

"#286.5. UNIT AREA AND PLAN OF UNITIZATION.

"The order of the Commission shall define the area of the common source of supply or portion thereof to be included within the unit area and prescribe with reasonable detail the plan of unitization applicable thereto.

"Each unit and unit area shall be limited to all or a portion of a single common source of supply. Only so much of a common source of supply as has reasonably been defined by actual drilling operations may be so included within the unit area.

"A unit may be created to embrace less than the whole of a common source of supply only where it is shown by the evidence that the area to be so included within the unit area is of such size and shape as may be reasonably required for the successful and efficient conduct of the unitized method or methods of operation for which the unit is created and that the conduct thereof will have no material adverse effect upon the remainder of such common source of supply.

"The plan of unitization for each such unit and unit area shall be one suited to the needs and requirements of the particular unit dependent upon the facts and conditions found to exist with respect thereto. In addition to such other terms, provisions, conditions and requirements found by the Commission to be reasonably necessary or proper to effectuate or accomplish the purpose of this Act[1] and subject to the further requirements hereof, each such plan of unitization as the parties thereto may agree upon shall be fair, reasonable and equitable, and among other proper and equitable provisions, shall provide:

"(a) For the efficient unitized management or control of the further development and operation of

1 Sections 286.1-286.17 of this title.

the unit area for the recovery of oil and gas from the common source of supply affected. Under such a plan the actual operations within the unit area may be carried on in whole or in part by the several lessees of leases within the unit area, subject to the supervision and direction of the unit, or may be conducted in whole or in part by the unit or some particular operator or operators of a lease or leases in the approved unit area dependent upon what is most beneficial or expedient. The designation of the operator shall be by vote of the lessees in the unit in a manner provided in the plan of unitization and not by the Commission.

"(b) The division of interest or formula for the apportionment and allocation of the unit production, among and to the several separately-owned tracts within the unit area such as will reasonably permit persons otherwise entitled to share in or benefit by the production from such separately-owned tracts to produce or receive, in lieu thereof, their fair, equitable and reasonable share of the unit production or other benefits thereof. A separately-owned tract's fair, equitable, and reasonable share of the unit production shall be measured by the value of each such tract for oil and gas purposes and its contributing value to the unit in relation to like values of other tracts in the unit, taking into account acreage, the quantity of oil and gas recoverable therefrom, location on structure, its probable productivity of oil and gas in the absence of unit operators, the burden of operation to which the tract will or is likely to be subjected, or so many of said factors, or such other pertinent engineering, geological, or operating factors, as may be reasonably susceptible of determination. Unit production as that term is used in this Act shall mean and include all oil and gas produced from a unit area from and after the effective date of the order of the Commission approving the creation of the unit regardless of the well or tract within the unit area from which the same is produced.

"(c) The manner in which the unit and the further development and operation of the unit area shall or may be financed and the basis, terms and conditions on which the cost and expense thereof shall be apportioned among and assessed against the tracts and interests made chargeable therewith, including a detailed accounting procedure governing all charges and credits incident to such operations. Upon and subject to such terms and conditions as to time and rate of interest as may be fair to all concerned, reasonable provisions shall be made in the plan of unitization for carrying or otherwise financing lessees who are unable to meet their financial obligations in connection with the unit.

"(d) The procedure and basis upon which wells, equipment and other properties of the several lessees within the unit area are to be taken over and used for unit operations, including the method of arriving at the compensation therefor, or of otherwise proportionately equalizing or adjusting the investment of the several lessees in the project as of the effective date of unit operations.

"(e) For the creation of an operating committee to have general over-all management and control of the unit and the conduct of its business and affairs and the operations carried on by it, together with the creation or designation of such other subcommittees, boards or officers to function under authority of the operating committee as may be necessary, proper or convenient in the efficient management of the unit, defining the powers and duties of all such committees, boards or officers and prescribing their tenure and time and method for their selection. Each lessee within the unit area shall be entitled to representation on the operating committee and shall have a vote equal to the proportionate interest of such lessee in the unit, provided, where the voting interest of a lessee is such as to control the action taken by the committee, the vote of such lessee shall not serve to carry or defeat action by the committee un-

less such vote is supported by the vote of a majority of the remaining lessees.

"(f) The time when the plan of unitization shall become and be effective.

"(g) The time when and conditions under which and the method by which the unit shall or may be dissolved and its affairs wound up. Laws 1945, p. 164, #5.

"#286.6. OBJECTION TO CREATION OF UNIT.

"If at any time after the filing of a petition for the creation of a unit and within sixty (60) days after the entry of an order by the Commission approving the creation of the same, lessees of record of fifteen per cent (15%) or more of the proposed unit area, if prior to the entry of the order by the Commission, or lessees of record of fifteen per cent (15%) or more of the unit area as defined by the approved plan of unitization and order of the Commission, if after the entry of such order, shall file written protest with the Commission against the creation of the unit, the Commission shall vacate all action of any kind theretofore taken and dismiss the proceedings for the creation of such unit. The fact that a lessee joined in the petition seeking authority to create the unit or otherwise participated in any of the steps thereafter taken with the view of creating the same, shall not preclude such lessee from filing a protest pursuant to the provisions of this Section. Laws 1945, p. 165, #6.

"#286.7. PROCEDURE AND APPEAL.

"Except as otherwise herein expressly provided, all proceedings had under this Act[1] including the filing of petitions, the giving of notices, the conduct of hearings and other action taken by the Commission shall be in the form and manner and in accord-

1 Sections 286.1-286.17 of this title.

ance with the procedure and procedural requirements provided in Sections 84 to 135, inclusive, Title 52, Oklahoma Statutes 1941, or any amendment thereof with reference to proceedings thereunder. Such additional notice shall be given as may be required by the Commission. The Conservation Officer, his assistant and deputies and the Conservation Attorney shall act without additional compensation as technical advisors to the Commission to the extent that the Commission may require. Any person aggrieved by any order of the Commission made pursuant to this Act may appeal therefrom to the Supreme Court of the State of Oklahoma upon the same conditions, within the same time and in the same manner as is provided in said Sections 84 to 135, inclusive, Title 52, Oklahoma Statutes 1941, for the taking of appeals from the orders of the Commission made thereunder, except in any such appeal the Commission shall be impartial, inactive and shall not be represented directly or indirectly by the Conservation Attorney, the Attorney General or any other public official or person. The Supreme Court on appeal shall have jurisdiction and authority and it shall be its duty to consider the validity of the order of the Commission appealed therefrom. On appeal the order of the Commission appealed from shall be regarded as *prima facie* valid, fair, reasonable and equitable, but if the order is found to be contrary to the clear weight of the evidence, in any one of such respects, the same shall be vacated and set aside and the cause referred to the Commission for further proceedings not inconsistent with the judgment of the court; otherwise the said order shall be affirmed.

"In addition to any other remedy provided in this Act any interested person, firm or corporation within a unit area feeling himself aggrieved by any order of the Commission or the action of a unit thereunder, may at any time institute a suit in the District Court of the County in which the greater part

of the unit area is located, as in other civil suits in equity, against the other lessees within the unit and in such suit have his rights and equities determined. Any person aggrieved by the judgment entered in such an action may appeal therefrom to the Supreme Court of the State of Oklahoma in the time and manner as appeals are taken in other civil actions. To the extent possible under existing laws the Supreme Court shall give precedence to all such appeals in the hearing and disposition thereof. Laws 1945, p. 165, #7.

"#286.8. OPERATIONS IN VIOLATION OF PLAN OF UNITIZATION UNLAWFUL.

"From and after the effective date of an order of the Commission approving the creation of a unit and approving the plan of unitization applicable thereto the drilling of any well into or the operation of any well producing from the common source of supply or portion thereof within the unit area defined in the order by persons other than the unit or persons acting under its authority or except in the manner and to this extent provided in such plan of unitization shall be unlawful and is hereby prohibited. Laws 1945, p. 166, #8.

"#286.9. THE NATURE, PURPOSES AND FUNCTIONS OF UNITS, AND LIABILITY OF OWNERS OF OIL AND GAS RIGHTS THEREIN FOR UNIT EXPENSE.

"Each unit created under the provisions of this Act[1] shall be a body politic and corporate, capable of suing, being sued and contracting as such in its own name. Each such unit shall be authorized on behalf and for the account of all the owners of the oil and gas rights within the unit area, without profit to the unit, to supervise, manage and conduct the further development and operations for the pro-

1 Sections 286.1-286.17 of this title.

duction of oil and gas from the unit area, pursuant to the powers conferred, and subject to the limitations imposed by the provisions of this Act and by the plan of unitization.

"The obligation or liability of the lessee or other owners of the oil and gas rights in the several separately-owned tracts for the payment of unit expense shall at all times be several and not joint or collective and in no event shall a lessee or other owner of the oil and gas rights in the separately-owned tract be chargeable with, obligated or liable, directly or indirectly, for more than the amount apportioned, assessed or otherwise charged to his interest in such separately-owned tract pursuant to the plan of unitization and then only to the extent of the lien provided for in this Act.

"Subject to such reasonable limitations as may be set out in the plan of unitization, the unit shall have a first and prior lien upon the leasehold interest only in the unitized common source of supply [exclusive of a one-eighth (1/8) royalty interest] in and to each separately-owned tract, the interest of the owners thereof in and to the unit production and all equipment in the possession of the unit, to secure the payment of the amount of the unit expense charged to and assessed against such separately owned tract. The interest of the lessee or other persons who by lease, contract or otherwise are obligated or responsible for the cost and expense of developing and operating a separately-owned tract for oil and gas in the absence of unitization shall, however, be primarily responsible for and charged with any assessment for unit expense made against such tract and resort may be had to overriding royalties, oil and gas payments, royalty interests in excess of a one-eighth (1/8) of the production, or other interests which otherwise are not chargeable with such cost, only in the event the owner of the interest primarily responsible fails to pay such assessment or the production to the credit thereof is insufficient for that

purpose. In the event the owner of any royalty interest, overriding royalty, oil and gas payment or other interest which under the plan of unitization is not primarily responsible therefor pays in whole or in part the amount of an assessment for unit expense for the purpose of protecting such interest, or the amount of the assessment in whole or in part is deducted from the unit production to the credit of such interest the owner thereof shall to the extent of such payment or deduction be subrogated to all of the rights of the unit with respect to the interest or interests primarily responsible for such assessment. A one-eighth (1/8) part of the unit production allocated to each separately-owned tract shall in all events be regarded as royalty to be distributed to and among, or the proceeds thereof paid to, the royalty owners free and clear of all unit expense and free of any lien therefor. Laws 1945, p. 166, #9.

"#286.10. PROPERTY AND CONTRACT RIGHTS.

"Property rights, leases and other contracts, and all rights and obligations shall meet the provisions and requirements of this Act[1] and to any valid and applicable plan of unitization or order of the Commission made and adopted pursuant hereto, but otherwise to remain in full force and effect.

"Nothing contained in this Act shall be construed to require a transfer to or vesting in the unit of title to the separately-owned tracts or leases thereon within the unit area, other than the right to use and operate the same to the extent set out in the plan of unitization; nor shall the unit be regarded as owning the unit production. The unit production and the proceeds from the sale thereof shall be owned by the several persons to whom the same is allocated under the plan of unitization. All property, whether real or personal, which the unit may in any way acquire, hold or possess shall not be acquired, held or possessed by the unit for its own account but shall be

1 Sections 286.1-286.17 of this title.

so acquired, held and possessed by the unit for the account and as agent of the several lessees and shall be the property of such lessees as their interests may appear under the plan of unitization, subject, however, to the right of the unit to the possession, management, use or disposal of the same in the proper conduct of its affairs, and subject to any lien the unit may have thereon to secure the payment of unit expense.

"The amount of the unit production allocated to each separately-owned tract within the unit, and only that amount, regardless of the well or wells in the unit area from which it may be produced, and regardless of whether it be more or less than the amount of the production from the well or wells, if any, on any such separately-owned tract, shall for all intents, uses, and purposes be regarded and considered as production from such separately-owned tract, and, except as may be otherwise authorized in this Act, or in the plan of unitization approved by the Commission, shall be distributed among or the proceeds thereof paid to the several persons entitled to share in the production for[2] such separately-owned tract in the same manner, in the same proportions, and upon the same conditions that they would have participated and shared in the production or proceeds thereof from such separately-owned tract had not said unit been organized, and with the same legal force and effect. If adequate provisions are made for the receipt thereof, the share of the unit production allocated to each separately-owned tract shall be delivered in kind to the persons entitled thereto by virtue of ownership of oil and gas rights therein or by purchase from such owners subject to the right of the unit to withhold and sell the same in payment of unit expense pursuant to the plan of unitization, and subject further to the call of the unit on such portions of the gas for operating purposes as may be provided in the plan of unitization.

2 Probably should read "from."

"Operations carried on under and in accordance with the plan of unitization shall be regarded and considered as a fulfillment of and compliance with all of the provisions, covenants, and conditions, express or implied, of the several oil and gas mining leases upon lands included within the unit area, or other contracts pertaining to the development thereof, insofar as said leases or other contracts may relate to the common source of supply or portion thereof included in the unit area. Wells drilled or operated on any part of the unit area no matter where located shall for all purposes be regarded as wells drilled on each separately-owned tract within such unit area. Laws 1945, p. 167, #10.

"#286.11. AMENDMENTS TO PLAN OF UNITIZATION.

"In any proceeding hereunder in which an order is entered creating a unit, the Commission shall retain jurisdiction thereof and of all parties in interest for the purpose of amending the plan of unitization from time to time whenever by reason of changed conditions or otherwise for good cause shown it is made to appear that such amendment is necessary or proper. Such an amendment may be made only upon the petition of lessees of record of ten per cent (10%) or more of the unit area. Any amendment to a plan of unitization made pursuant hereto shall be effective prospectively only from and after the date on which the order providing for such amendment shall become final. The procedure for any such amendment including the filing of a petition, the giving of notice and conduct of the hearing shall be the same as that required for the creation of a unit and the adoption of a plan of unitization in the first instance, insofar as applicable. Laws 1945, p. 168, #1.

"#286.12. ENLARGEMENT OF UNITS.

"The unit area of a unit may be unitized with adjoining and contiguous portions of the same common source of supply including the unit area of another or other units, and a unit created for the unitized management, operation and further development of such enlarged unit area upon the filing of a petition therefor and after notice and hearing, in the same manner, on the same conditions, but subject to the right of lessees of record of fifteen per cent (15%) or more of an existing unit area to protest, and veto such enlargement or merger, all as herein provided with respect to the creation of a unit in the first instance. Upon the creation of a larger unit embracing the unit area of one or more smaller units, the larger unit so created shall thereupon supersede such smaller unit or units. Laws 1945, p. 169, #12.

"#286.13. PUBLIC LANDS.

"The Commissioners of the Land Office, or other proper board or officer of the State having the control and management of State land, and the proper board or officer of any political, municipal, or other subdivision or agency of the State, are hereby authorized and shall have the power on behalf of the State or of such political, municipal, or other subdivision or agency thereof, with respect to land or oil and gas rights subject to the control and management of such respective body, board, or officer, to consent to or participate in any plan or program of unitization adopted pursuant to this Act.[1] Laws 1945, p. 169, #13.

1 Sections 286.1-286.17 of this title.

"#286.14. NO INCOME OR PROFIT SUBJECT TO TAXATION.

"Neither the unit production or proceeds from the sale thereof, nor other receipts shall be treated, regarded, or taxed as income or profits of the unit; but instead, all such receipts shall be the income of the several persons to whom or to whose profit the same are payable under the plan of unitization. To the extent the unit may receive or disburse said receipts it shall only do so as a common administrative agent of the persons to whom the same are payable. Laws 195, p. 169, #14.

"#286.15. DEFINITIONS.

"For the purposes of this Act,[1] unless the context otherwise requires:

"(a) The term 'lessee' refers not only to lessees under oil and gas leases but also to the owners of unleased lands or mineral rights having the right to develop the same for oil and gas.

"(b) Any reference to a separately-owned tract, although in general terms broad enough to include the surface and all underlying common sources of supply of oil and gas shall have reference thereto only in relation to the common source of supply or portion thereof embraced within the unit area of a particular unit.

"(c) The phrase 'oil and gas' shall refer not only to oil and gas as such in combination one with the other, but shall have general reference to oil, gas, casinghead gas, casinghead gasoline, gas-distillate, or other hydrocarbons, or any combination or combinations thereof, which may be found in or produced from a common source of supply of oil, oil and gas or gas-distillate.

"(d) The term 'person' shall mean and include any individual, corporation, partnership, common

1 Sections 286.1-286.17 of this title.

law or statutory trust, association of any kind, the State of Oklahoma or any subdivision or agency thereof acting in a proprietary capacity, guardian, executor, administrator, fiduciary of any kind, or any other entity or being capable of owning an interest in and to a common source of supply of oil and gas.

"(e) The term 'unit expense' shall include and mean any and all cost, expense, or indebtedness incurred by the unit in the establishment of its organization, or incurred in the conduct and management of its affairs or the operations carried on by it, authorized by the approved plan of unitization. Laws 1945, p. 169 #15.

"#286.16. CONSTRUCTION OF ACT.

"The provisions of this Act[1] are declared to be severable, and, if any section, sentence, clause or part thereof be held invalid or unconstitutional for any reason, such invalidity or unconstitutionality shall not be construed to affect the validity of the remaining provisions of this Act. Laws 1945, p. 170, #16.

"#286.17. UNITIZATION AGREEMENTS NOT VIOLATIVE OF ANTI-TRUST LAWS OR IN RESTRAINT OF TRADE.

"No agreement between or among lessees or other owners of oil and gas rights in oil and gas properties, entered into pursuant hereto or with a view or for the purpose of bringing about the unitized development or operation of such properties, shall be held to violate any of the statutes of this State prohibiting monopolies or Acts, arrangements, agreements, contracts, combinations or conspiracies in restraint of trade or commerce. Laws 1945, p. 170, #17."

1 Sections 286.1-286.17 of this title.

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Supreme Court of the United States

(OCTOBER TERM, 1951)

No. 301

THE PALMER OIL CORPORATION, PAUL STERBA and PAUL STERBA, JR., a minor, etc.,
Appellants,
VERSUS
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No. 302

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VERSUS
AMERADA PETROLEUM CORPORATION, ET AL.,
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In the
Supreme Court of the United States
(OCTOBER TERM, 1951)

No. 301

THE PALMER OIL CORPORATION, PAUL STERBA and PAUL STERBA, JR., a minor, etc.,
Appellants,

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AMERADA PETROLEUM CORPORATION, ET AL.,
Appellees.

BRIEF OF APPELLEES

STATEMENT

Involved herein is the validity of House Bill 339 of the 1945 Oklahoma Legislature[1] providing for the unitized operation and further development of separately owned

---

1. Sections 286.1-286.17, Title 52, O. S. Supp. 1949, the more important substantive provisions of which are set out in the Statement that follows.

tracts within a common source of supply of oil and gas and of Order No. 20289 of the Oklahoma Corporation Commission dated September 5, 1947 (R. 1239) so unitizing the West Cement Medrano common source of supply in Caddo County, Oklahoma.

The Supreme Court of Oklahoma in the judgment from which these cases are appealed, March 20, 1951, not yet officially reported in the Oklahoma Reports, 231 P.2d 997 (R. 28-56), has sustained the validity of the law and order and determined that the order was amply supported by the evidence. The appellants attack the correctness of such judgment and the validity of the law and order. Appellees appear in support thereof.

Facts Giving Rise to Statute

It has long been recognized by the oil and gas industry, the oil and gas regulatory agencies of the several states, the several boards and agencies empowered by the federal government to investigate the matter, the Interstate Oil Compact Commission, the courts, and other persons and agencies familiar therewith that an oil and gas reservoir, pool or common source of supply, as it is variously called, is inherently a physical unit and should be developed and operated as such; that what is done in one part of the reservoir directly affects other parts thereof; that the primary force resulting in the recovery of oil is the presence under pressure of either gas or water, or both, associated with the oil, known as reservoir energy, which, when a pressure differential is created due to the opening

of a well, expands or otherwise drives the oil to the well bore where it can be produced; that the reservoir energy is common to the reservoir as a whole and, as was said by the Oklahoma Supreme Court in the case of *Russell* v. *Walker* (1932), 160 Okla. 145, 15 P.2d 114, 117, "is owned in common by the owners of the common source of supply"; that once the pressure or reservoir energy is depleted, production ceases; that by dividing the reservoir into a large number of small tracts and operating each such tract as a separate unit, using the best known methods of operation possible under such conditions, results in the wasteful use and dissipation of the reservoir energy and, as a rule, results in the recovery of not to exceed 20 to 25 per cent of the oil in the reservoir, leaving unrecovered, and in most instances unrecoverable, as much as 75 to 80 per cent; that by treating and operating the reservoir as a single indivisible unit whereby a full and proper use can be made of the natural reservoir energy and pressure maintenance or repressuring operations can be carried on through the return of gas or water to the reservoir, from twice to three times as much oil can be recovered than can otherwise be recovered; that the maximum efficiency, waste prevention and conservation generally can only be obtained where the reservoir is treated and operated as a unit.[2]

Although there are many pools or parts of pools in the United States today which, by agreement, have been unitized and are being successfully operated as units, progress in this regard has been hampered and the unitization of many other pools blocked because of divided owner-

ship and the failure or refusal of a minority owner or owners, for selfish or other reasons, to so agree.[2]

Statute Involved

In order to make possible the unitized operation of oil reserves in the State of Oklahoma, the Oklahoma Legislature in 1945 enacted House Bill 339, providing a means and procedure therefor. The object of the legislation is stated in Section 1 thereof, as follows:

> "The Legislature finds and determines that it is desirable and necessary, under the circumstances and for the purposes hereinafter set out, to authorize and provide for unitized management, operation and further development of the oil and gas properties to which this Act is applicable, to the end that a greater ultimate recovery of oil and gas may be had therefrom, waste prevented and the correlative rights of the owners in a fuller and more beneficial enjoyment of the oil and gas rights, protected."

Although set out in full at pages 111-125 of the printed Statement As to Jurisdiction of appellant, The Palmer Oil Corporation, and as an appendix to said appellant's brief, a brief summary of the Act and a quotation of the more important substantive provisions will, we think, here prove helpful to a better understanding of the case.

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2. See bibliography of source materials, including court decisions, attached hereto as Appendix "A". For a clearly stated informative, up-to-date discussion of the engineering and operating facts requiring the unitized operation of oil and gas pools, we invite the court to, in particular, read the book entitled **Oil and Gas Production: An Introductory Guide to Production Techniques and Conservation Methods,** compiled by the Engineering Committee of the Interstate Oil Compact Commission, published by the University of Oklahoma Press, Norman, Oklahoma, March, 1951.

Section 2 defines and limits the common sources of supply to which the Act is applicable.

Section 3 vests the Oklahoma Corporation Commission, the body having general supervision over oil and gas conservation in the state,[3] with authority to administer the Act.

Sections 4 and 5 read as follows:

"Section 4. If upon the filing of a petition therefor and after notice and hearing, all in the form and manner and in accordance with the procedure and requirements hereinafter provided, the Commission shall find (a) that the unitized management, operation and further development of a common source of supply of oil and gas or portion thereof is reasonably necessary in order to effectively carry on pressure-maintenance or repressuring operations, cycling operations, water flooding operations, or any combination thereof, or any other form of joint effort calculated to substantially increase the ultimate recovery of oil and gas from the common source of supply; and (b) that one or more of said unitized methods of operation as applied to such common source of supply or portion thereof are feasible, will prevent waste and will with reasonable probability result in the increased recovery of substantially more oil and gas from the common source of supply than would otherwise be recovered; and (c) that the estimated additional cost, if any, of conducting such operations will not exceed the value of the additional oil and gas so recovered; and (d) that such unitization and adoption of one or more of such unitized methods of operation is for the common good and will result in the general advantage of the owners of the oil and gas rights

3. Sections 81-279, 291-303, Title 52, O. S. 1951.

within the common source of supply or portion thereof directly affected, it shall make a finding to that effect and enter an order approving the creation of a unit composed of the lessees and other persons who under the plan of unitization approved by the Commission are chargeable with the responsibility and cost of conducting such unitized methods of operation, development of the common source of supply or portion thereof described in the order, all upon such terms and conditions, as may be shown by the evidence to be fair, reasonable, equitable and which are necessary or proper to protect, safeguard, and adjust the respective rights and obligations of the several persons affected, including royalty owners, owners of overriding royalties, oil and gas payments, carried interests, mortgagees, lien claimants and others, as well as the lessees. To give the Commission jurisdiction hereunder, the petition shall be filed by, or with the authority of, lessees of record of fifty percent (50%) or more of the area of the common source of supply or portion thereof sought to be unitized. The petition shall set forth a description of the proposed unit area with a map or plat thereof attached, must allege the existence of the facts required to be found by the Commission as hereinabove provided and shall have attached thereto a recommended plan of unitization applicable to such proposed unit area and which the petitioners consider to be fair, reasonable and equitable.

"Section 5. The order of the Commission shall define the area of the common source of supply or portion thereof to be included within the unit area and prescribe with reasonable detail the plan of unitization applicable thereto.

"Each unit and unit area shall be limited to all or a portion of a single common source of supply. Only

so much of a common source of supply as has reasonably been defined by actual drilling operations may be so included within the unit area.

"A unit may be created to embrace less than the whole of a common source of supply only where it is shown by the evidence that the area to be so included within the unit area is of such size and shape as may be reasonably required for the successful and efficient conduct of the unitized method or methods of operation for which the unit is created, and that the conduct thereof will have no material adverse effect upon the remainder of such common source of supply.

"The plan of unitization for each such unit and unit area shall be one suited to the needs and requirements of the particular unit dependent upon the facts and conditions found to exist with respect thereto. In addition to such other terms, provisions, conditions and requirements found by the Commission to be reasonably necessary or proper to effectuate or accomplish the purpose of this Act, and subject to the further requirements thereof, each such plan of unitization as the parties hereto may agree upon shall be fair, reasonable and equitable, and among other proper and equitable provisions, shall provide:

"(a) For the efficient unitized management or control of the further development and operation of the unit area for the recovery of oil and gas from the common source of supply affected. Under such a plan the actual operations within the unit area may be carried on in whole or in part by the several lessees of leases within the unit area, subject to the supervision and direction of the unit, or may be conducted in whole or in part by the unit or some particular operator or operators of a lease or leases in the approved unit area dependent upon what is most

beneficial or expedient. The designation of the operator shall be by vote of the lessees in the unit in a manner provided in the plan of unitization and not by the Commission.

"(b) The division of interest or formula for the apportionment and allocation of the unit production, among and to the several separately-owned tracts within the unit area such as will reasonably permit persons otherwise entitled to share in or benefit by the production from such separately-owned tracts to produce or receive, in lieu thereof, their fair, equitable and reasonable share of the unit production or other benefits thereof. A separately-owned tract's fair, equitable, and reasonable share of the unit production shall be measured by the value of each such tract for oil and gas purposes and its contributing value to the unit in relation to like values of other tracts in the unit, taking into account acreage, the quantity of oil and gas recoverable therefrom, location on structure, its probable productivity of oil and gas in the absence of unit operations, the burden of operation to which the tract will or is likely to be subjected, or so many of said factors, or such other pertinent engineering, geological, or operator factors, as may be reasonably susceptible of determination. Unit production as that term is used in this Act shall mean and include all oil and gas produced from a unit area from and after the effective date of the order of the Commission approving the creation of the unit regardless of the well or tract within the unit area from which the same is produced;

"(c) The manner in which the unit and the further development and operation of the unit area shall or may be financed and the basis, terms and conditions on which the cost and expense thereof shall be apportioned among and assessed against the tracts

and interests made chargeable therewith, including a detailed accounting procedure governing all charges and credits incident to such operations. Upon and subject to such terms and conditions as to time and rate of interest as may be fair to all concerned, reasonable provisions shall be made in the plan of unitization for carrying or otherwise financing lessees who are unable to meet their financial obligations in connection with the unit.

"(d) The procedure and basis upon which wells, equipment and other properties of the several lessees within the unit area are to be taken over and used for unit operations, including the method of arriving at the compensation therefor, or of otherwise proportionately equalizing or adjusting the investment of the several lessees in that project as of the effective date of unit operations.

"(e) For the creation of an operating committee to have general over-all management and control of the unit and the conduct of its business and affairs and the operations carried on by it, together with the creation or designation of such other subcommittees, boards or officers to function under authority of the operating committee as may be necessary, proper or convenient in the efficient management of the unit, defining the powers and duties of all such committees, boards or officers and prescribing their tenure and time and method for their selection. Each lessee within the unit area shall be entitled to representation on the operating committee and shall have a vote equal to the proportionate interest of such lessee in the unit, provided, where the voting interest of a lessee is such as to control the action taken by the committee, the vote of such lessee shall not serve to carry or defeat action by the committee unless such vote is supported by the vote of a majority of the remaining lessees.

"(f) The time when the plan of unitization shall become and be effective;

"(g) The time when and conditions under which and the method by which the unit shall or may be dissolved and its affairs wound up."

Section 6 provides that if at any time after the filing of the petition and within sixty days after the entry of the order creating the unit, lessees of record of 15 per cent or more of the area affected file written protests, the proceeding shall be dismissed.

Section 6, together with the provisions of the next to the last sentence of Section 4, makes as a legislative condition to the creation of a unit under the Act the approval or acquiescence of lessees of record of not less than 85 per cent of the area affected. If, however, as pointed out in the argument to follow, a unit is to be created, it is the Corporation Commission under the requirements of the law, after notice and hearing and subject to the right of review on appeal, that fixes and prescribes the terms, provisions and conditions of the plan of unitization applicable thereto and not the petitioners or any percentage of the lessees.

Section 7 provides for a full and direct appeal from an order made by the Corporation Commission under the Act by "any person aggrieved" thereby to the Supreme Court of Oklahoma in the same manner that appeals from other orders pertaining to oil and gas conservation are taken. The authority of the Supreme Court on appeal is stated as follows:

"The Supreme Court on appeal shall have jurisdiction and authority and it shall be its duty to review the record of proceedings and transcript of evidence and to consider the validity of the order of the Commission appealed therefrom. On appeal the order of the Commission appealed from shall be regarded as *prima facie* valid, fair, reasonable and equitable, but if the order is found to be contrary to the clear weight of the evidence, in any one of such respects, the same shall be vacated and set aside and the cause referred to the Commission for further proceedings not inconsistent with the judgment of the court; otherwise the said order shall be affirmed."

Section 7 further provides that, in addition to any other remedy provided in the Act, any interested person, firm or corporation within the unit area feeling himself aggrieved by any order of the Corporation Commission or the action of a unit thereunder may at any time institute a suit in the District Court of the county in which the greater part of the unit area is located and in such suit have his rights determined, coupled with the right of appeal to the State Supreme Court from the action of the District Court.

Section 8 makes operations in violation of the plan of unitization prescribed by the Commission unlawful.

Sections 9 and 10 are as follows:

"Section 9. Each unit created under the provisions of this Act shall be a body politic and corporate, capable of suing, being sued and contracting as such in its own name. Each such unit shall be authorized on behalf and for the account of all the owners of the oil and gas rights within the unit area, without profit

to the unit, to supervise, manage and conduct the further development and operations for the production of oil and gas from the unit area, pursuant to the powers conferred, and subject to the limitations imposed by the provisions of this Act and by the plan of unitization.

"The obligation or liability of the lessee or other owners of the oil and gas rights in the several separately-owned tracts for the payment of unit expense shall at all times be several and not joint or collective and in no event shall a lessee or other owner of the oil and gas rights in the separately-owned tract be chargeable with, obligated or liable, directly or indirectly, for more than the amount apportioned, assessed or otherwise charged to his interest in such separately-owned tract pursuant to the plan of unitization and then only to the extent of the lien provided for in this Act.

"Subject to such reasonable limitations as may be set out in the plan of unitization, the unit shall have a first and prior lien upon the leasehold interest only in the unitized common source of supply (exclusive of a one-eighth (1/8) royalty interest) in and to each separately-owned tract, the interest of the owners thereof in and to the unit production and all equipment in the possession of the unit, to secure the payment of the amount of the unit expense charged to and assessed against such separately-owned tract. The interest of the lessee or other persons who by lease, contract or otherwise are obligated or responsible for the cost and expense of developing and operating a separately-owned tract for oil and gas in the absence of unitization shall, however, be primarily responsible for and charged with any assessment for unit expense made against such tract and resort may be had to overriding royalties, oil and gas payments, roy-

alty interests in excess of a one-eighth (⅛) of the production, or other interests which otherwise are not chargeable with such cost, only in the event the owner of the interest primarily responsible fails to pay such assessment or the production to the credit thereof is insufficient for that purpose. In the event the owner of any royalty interest, overriding royalty, oil and gas payment or other interest which under the plan of unitization is not primarily responsible therefor pays in whole or in part the amount of an assessment for unit expense for the purpose of protecting such interest, or the amount of the assessment in whole or in part is deducted from the unit production to the credit of such interest, the owner thereof shall to the extent of such payment or deduction be subrogated to all of the rights of the unit with respect to the interest or interests primarily responsible for such assessment. A one-eighth (⅛) part of the unit production allocated to each separately-owned tract shall in all events be regarded as royalty to be distributed to and among, or the proceeds thereof paid to, the royalty owners free and clear of all unit expense and free of any lien therefor.

"Section 10. Property rights, leases and other contracts, and all rights and obligations shall meet the provisions and requirements of this Act and to any valid and applicable plan of unitization or order of the Commission made and adopted pursuant hereto, but otherwise to remain in full force and effect.

"Nothing contained in this Act shall be construed to require a transfer to or vesting in the unit of title to the separately-owned tracts or leases thereon within the unit area, other than the right to use and operate the same to the extent set out in the plan of unitization; nor shall the unit be regarded as owning the unit production. The unit production and the pro-

ceeds from the sale thereof shall be owned by the several persons to whom the same is allocated under the plan of unitization. All property, whether real or personal, which the unit may in any way acquire, hold or possess shall not be acquired, held or possessed by the unit for its own account but shall be so acquired, held and possessed by the unit for the account and as agent of the several lessees and shall be the property of such lessees as their interests may appear under the plan of unitization, subject, however, to the right of the unit to the possession, management, use or disposal of the same in the proper conduct of its affairs, and subject to any lien the unit may have thereon to secure the payment of unit expense.

"The amount of the unit production allocated to each separately-owned tract within the unit, and only that amount, regardless of the well or wells in the unit area from which it may be produced, and regardless of whether it be more or less than the amount of the production from the well or wells, if any, on any such separately-owned tract, shall for all intents, uses, and purposes be regarded and considered as production from such separately-owned tract, and, except as may be otherwise authorized in this Act, or in the plan of unitization approved by the Commission, shall be distributed among or the proceeds thereof paid to the several persons entitled to share in the production for such separately-owned tract in the same manner, in the same proportions, and upon the same conditions that they would have participated and shared in the production or proceeds thereof from such separately-owned tract had not said unit been organized, and with the same legal force and effect. If adequate provisions are made for the receipt thereof, the share of the unit production allocated to each separately-owned tract shall be delivered in kind to

the persons entitled thereto by virtue of ownership of oil and gas rights therein or by purchase from such owners subject to the right of the unit to withhold and sell the same in payment of unit expense pursuant to the plan of unitization, and subject further to the call of the unit on such portions of the gas for operating purposes as may be provided in the plan of unitization.

"Operations carried on under and in accordance with the plan of unitization shall be regarded and considered as a fulfillment of and compliance with all of the provisions, covenants, and conditions, express or implied, of the several oil and gas mining leases upon lands included within the unit area, or other contracts pertaining to the development thereof, insofar as said leases or other contracts may relate to the common source of supply or portion thereof included in the unit area. Wells drilled or operated on any part of the unit area no matter where located shall for all purposes be regarded as wells drilled on each separately-owned tract within such unit area."

Section 11 makes provision for the subsequent amendment of a plan of unitization.

Section 12 provides for the enlargement of units.

Section 13 relates to the inclusion of public lands within a unit.

Section 14 provides that a unit as such shall have no income but that instead, all receipts shall be the income of the several persons to whom or to whose credit the same are payable under the plan of unitization.

Section 15 defines certain terms used in the Act.

Section 16 is a severability clause to the effect that if any sentence, clause, etc., be held invalid or unconstitutional for any reason, such invalidity or unconstitutionality shall not affect the remaining provisions of the Act.

Section 17 provides that agreements among lessees or other owners of oil and gas rights entered into with the view of bringing about the unitized development and operation of such rights shall not be violative of the antitrust laws.

Findings and Order in Respect to West Cement Medrano Common Source of Supply of Oil

Pursuant to the provisions of House Bill 339, *supra*, lessees of more than 50 per cent of the West Cement Medrano common source of supply of oil in Caddo County, Oklahoma, on October 22, 1946, filed a petition (R. 173) in Cause CD No. 1308 with the Oklahoma Corporation Commission for an order creating the West Cement Medrano Unit and prescribing the applicable Plan of Unitization for the purpose of the unitized management, operation and further development of said common source of supply of oil, alleging the facts required to be alleged by said unitization law. Commencing on December 9, 1946 (R. 201), and continuing with twenty-four days of testimony extending over a period of eight months (R. 201-1237), the Corporation Commission heard the testimony of every person who desired to be heard, either in full or in opposition to the petition, including all of the appellants and appellees in this Court, and on September 5, 1947, en-

tered its Order No. 20289 (R. 1239) creating the West Cement Medrano Unit, defining the Unit Area thereof and prescribing the Plan of Unitization applicable thereto.

The Commission, in respect to the West Cement Medrano Pool unitized by its order, found that such pool was a single common source of supply of oil and gas (R. 1243) embracing approximately 3,700 acres of land (R. 1244); that said source of supply consisted of a gas cap along the high part of the producing formation, from which primary production was gas, whereas the primary production from wells lower on the structure was oil; that all parts of the common source of supply are permeably connected so as to permit the migration of oil or gas, or both, from one portion of the common source of supply to another wherever and whenever pressure differentials are created as a result of the production or operations for the production of oil or gas from the producing formations (R. 1243); that the lands embraced within the Unit Area are divided into a large number of individual tracts of varying size and shape and owned in severalty by a large number of different individuals, firms and corporations owning varying interests therein, including not less than 25 different lessees and several hundred royalty owners (R. 1244).

In respect to the waste and inequities resulting from nonunitized operations and the increased recovery and benefits resulting from unit operations, the Commission, in Paragraphs 6, 7, 8 and 9 of its Findings of Fact (R. 1245-1247), found as follows:

"6. That without the unitization of said West Cement Medrano common source of supply of oil and gas the only method whereby said pool can be feasibly and effectively operated and produced for the recovery of oil and gas therefrom is by and under individual competitive pressure depletion methods of operation, the methods now being used in the pool, that is to say, by treating each separately owned tract or lease as a separate unit for operating and production purposes and depending on the natural energy in the producing formation to move what oil and gas can be moved thereby out of the formation to the well bore where it can be produced; that the principal natural energy mechanism in said pool is gas in solution with the oil coupled with a gas cap expansion; that under present competitive methods of operation, treating each tract or lease as a separate operating unit, there has been and still continues to be a disproportionate, inequitable and wasteful utilization and dissipation of the gas energy in the pool by certain tracts to the detriment and disadvantage of other tracts and to the injury of the pool as a whole; that by and under the best known competitive pressure depletion methods of operation not more than 25% or approximately 24 million barrels of the 97 million barrels of oil originally in place in the reservoir can be economically recovered, leaving the remaining 75%, or approximately 73 million barrels of oil in the ground unrecovered and *un*recoverable except through and by means of unitization of the pool and the adoption of unitized methods of operation therein; that to permit the owners of gas wells and high gas-oil ratio wells to continue to produce such wells will result in robbing the oil wells of gas energy required to produce the oil; that to shut in the gas wells and the high gas-oil ratio wells without permitting the owners thereof to share in the oil and gas production from

the oil wells, would deprive the owners of the gas wells of their fair share of the production from the pool; that the value of the recoverable oil exceeds many times the market value of the gas; that the return to the reservoir of the gas produced from the oil to supplement the remaining natural gas energy and retard the decline in reservoir pressure and perhaps the injection at some later date of water low on structure is desirable and necessary to obtain the greatest ultimate recovery of oil from the pool, but which cannot be done in the absence of unitization because of the migratory nature of the injected gas or water and the effect that the injection thereof into the reservoir would have upon properties in the pool other than the property on which the gas or water is injected and upon the pool as a whole.

"7. That by and through the unitization of the proposed Unit Area and the unitized management and operation and further development thereof as a unit, all as set out and provided for in the Plan of Unitization hereto attached, full use can be made of the gas energy in the reservoir to the mutual advantage of all the owners of the said common source of supply of oil and gas, that waste of large volumes of oil and gas can be prevented, gas can and will be returned to the reservoir to supplement the natural reservoir energy, water encroachment, either natural or artificial, on the lower side of the pool can be properly controlled and utilized, substantially more oil, amounting to many millions of barrels, can be recovered from the common source of supply than can be otherwise recovered, a more equitable distribution of the recoverable oil and gas can be had as between the several owners of the pool and the correlative rights of the several owners can be more fully protected.

"8. The unitization and unitized management and operation and further development of said common source of supply as a unit is reasonably necessary to effectively carry on the unitized methods of operation described in the proposed Plan of Unitization.

"9. That any one or all of the unitized methods of operation described in the attached Plan of Unitization as applied to the common source of supply underlying and included within the Unit Area are feasible, will prevent waste, and will, with reasonable probability, result in the increased recovery of substantially more oil and gas from the common source of supply than would otherwise be recovered; that the estimated additional cost of conducting such operations will not exceed the value of the additional oil and gas so recovered; that such unitization and the adoption of any one or more of such unitized methods of operation is for the common good and will result in the general advantage to the owners of the oil and gas rights in and to the common source of supply thereby affected."

In respect to the Plan of Unitization attached to and made a part of the order and which by the terms of the unitization statute and of the order governs the operation of the Unit, the Commission (R. 1247-1248) found:

"11. That the Plan of Unitization attached to this order and which is made a part hereof, is one suited to the needs and requirements of the West Cement Medrano Unit, the creation of which is hereby authorized and approved, taking into account all the facts and conditions found by the Commission to exist in respect thereto; that said Plan of Unitization is fair, reasonable and equitable and contains all the terms, provisions, conditions and requirements reasonably

necessary and proper to protect, safeguard and adjust the respective rights and obligations of the several persons affected, including royalty owners, owners of overriding royalty interests, oil and gas payments, carried interests, mortgages, lien claimants, and others, as well as the lessees and such as will effectuate and accomplish the purposes of H. B. 339 of the 1945 Oklahoma Legislature; that said plan of unitization provides for the efficient unitized management and control of the further development and operation of the Unit Area for the recovery of oil and gas from the common source of supply affected; that the division of interests set forth in 'Exhibit B' attached to said Plan of Unitization pursuant to which the unit production is to be apportioned and allocated among and to the several separately owned tracts within the Unit Area is fair and equitable and is such as will reasonably permit persons otherwise entitled to share in or benefit by the production from such separately owned tracts to receive, in lieu thereof, their fair, equitable and reasonable share of the unit production or other benefits thereof; that the division of interest assigned to the several separately owned tracts in the Unit Area as set out in said 'Exhibit B' to said Plan of Unitization is fair and reasonably representative of the value of said several tracts for oil and gas purposes and the contributing value thereof to the unit in relation to like values of other tracts in the unit; that the basis used to arrive at said division of interest takes into account the acreage of the several separately owned tracts, the quantity of oil and gas recoverable therefrom, the location thereof on structure, the probable productivity of oil and gas from such tracts in the absence of unitization, the burden of operation to which such tracts will or are likely to be subjected, together with all other pertinent engineering, geological and operating factors as are reasonably sus-

ceptible of determination; that the manner in which and the basis, terms and conditions on which the cost and expense of the further development and operation of the Unit Area shall be financed and apportioned among and assessed against the tracts and interests chargeable therewith are fair, reasonable and equitable; that the provisions of the said Plan with respect to taking over and using the wells, equipment and other properties of the several lessees within the Unit Area, including the method of arriving at the compensation therefor and otherwise proportionately equalizing and adjusting the investment of the several lessees in the project as of the effective date of the unit operations are fair, reasonable and equitable; that the provisions of said Plan with respect to the creation of an operating committee and the powers and duties of such committee are fair, reasonable and equitable.

"12. That the Plan of Unitization hereto attached in all respects conforms to and complies with the requirements of H. B. 339 of the 1945 Oklahoma Legislature."

Attached to and made a part of the order was the Plan of Unitization prescribed by the Commission (R. 1250-1303),[4] which in great detail defined the Unit, its Unit Area, the powers and duties of the Unit, the effect of unitization, how the production was to be allocated, the powers of an Operating Committee consisting of a representative of each lessee, the time when the Unit shall become effective, the manner of selection and powers of a Unit Operator, the method of payment and of apportionment of the cost and expense of the project, the man-

4. Also attached as Appendix "C" to brief of appellants, The Palmer Oil Corporation, et al.

ner of initially adjusting the investment of the several lessees, the general plan of operation, and all other matters material to the unitized operation of the pool and the rights and obligations of all parties in respect thereto, found by the Commission to comply in all respects with the requirements of the unitization law (R. 1248).

The Commission further found that at the time of the making of its order the Plan of Unitization so prescribed by it had been signed by lessees of record and of approximately 94 per cent of the area of the common source of supply and that the lessees appearing at the hearing and protesting the granting of the petition were lessees of approximately 4 per cent thereof (R. 1244-1245).

Evidence in Support of Order

Contrary to the statements of appellants, every finding required to be made by the statute and every finding by the Commission in its order is amply sustained by an abundance of evidence. The evidence in the case occupies approximately 1036 pages of the printed record, beginning at page 201 and continuing through page 1237, plus 116 exhibits. The Commission, in respect to the evidence, in its order said (R. 1241):

> "At the hearing everyone who desired to do so, regardless of the interest of such person, was given full opportunity to offer any and all competent evidence that any such person chose to offer, either for or against the recommended plan of unitization or by way of amendment thereto, and to otherwise be heard in regard thereto. The evidence so introduced

consisted of extensive geological, engineering and other proof concerning the history, development, discovery, operation and present condition of the West Cement Medrano field and the probable results obtainable both under present competitive methods of operation and through the unitization thereof; proof both pro and con as to the fairness, reasonableness and equitableness of the recommended Plan of Unitization; and proof by protestants with respect to certain amendments which they claim should be made in said Plan.

"In addition to the knowledge gained from the evidence introduced at said hearing, the Commission has had, over a period of time, a general knowledge of the West Cement Medrano field and of conditions existing therein gained through the exercise by it of its jurisdiction over such field under the Conservation Laws of the State of Oklahoma, dating from the discovery thereof. As a result of the evidence, statements and arguments introduced and made in the hearing here under consideration, and by reason of its general knowledge of said West Cement Medrano field, as aforesaid, the Commission is of the opinion that it has sufficient knowledge and information upon which to base a proper order in this cause."

The Supreme Court of Oklahoma, which under the statute was required to and did review the evidence, found the same to be sufficient.

To avoid repetition, appellees do not here detail the evidence but refer the court to Point IV of the argument wherein reference is made to the evidence sustaining the parts of the order which appellants assert are not supported by the evidence.

The most that appellants can say is that in certain respects there was a conflict of evidence. The Corporation Commission of Oklahoma, the duly constituted and well qualified governmental body charged by the state with hearing the evidence and determining the facts, resolved this conflict in favor of the findings and order in this case.

Action Taken Pursuant to Order

Although not appearing in the record in this case because of their occurrence subsequent to the completion of the record and proceedings before the Commission, the following are pertinent facts which are matters of record known to the parties in interest and concerning which there can be no dispute.

Pursuant to the order of the Commission, the West Cement Medrano Unit created thereby on December 1, 1947, took over the operation of the West Cement Medrano Pool as a single unit and has since continued to operate the same as such. In compliance with the order the Unit has installed gas gathering, compression and injection facilities at a cost in excess of one million dollars and has returned all produced gas the reservoir. In addition, it has drilled five additional oil production wells strategically located along the lower flank of the oil producing portion of the field. Two additional wells have yet to be drilled.

At the time the Unit took over the operation of the pool, the pool was producing approximately 4,600 barrels of oil per day. Today, after four years and four months of unit operation, the field is still producing an average of

4,500 barrels of oil per day, having in the meantime produced 6,460,000 barrels of oil over and above what had been produced at the time the pool was unitized. From the time that oil was first discovered in the pool in March, 1943, to the date of unitization on December 1, 1947, the pool by nonunitized methods of production only produced approximately 11,000 barrels of oil per pound of reservoir pressure drop. Subsequent to unitization the pool has produced 43,000 barrels of oil per pound of reservoir pressure drop. Before unitization, the pool had produced about 60 per cent of the gas in the reservoir with only 6.7 per cent of the oil initially in place (R. 246). Since unitization the pool has produced approximately the same percentage of the oil in place with only 3.6 per cent of the gas. Considering the vital importance of reservoir pressure and the efficient use of the gas energy to the production of oil, the increased recovery of oil per pound of pressure drop and the reduced ratio between produced gas and oil recovery clearly evidences the success of the project. No gas is being blown to the air but, except for that used as fuel, is all being returned to the reservoir. At such time as the maximum oil recovery is obtained, a large portion of the gas so returned to the reservoir and utilized as reservoir energy will be available for sale or light, heat and power purposes for the benefit of all concerned.

Proceedings on Appeal

In due time after the entry by the Corporation Commission of its unitization order, the appellants in this court lodged their appeals in the Supreme Court of Okla-

homa (R. 146-167), as authorized by the unitization law. In addition, The Palmer Oil Corporation, Paul Sterba and Paul Sterba, Jr., appellants in this court, filed an original proceeding in the Supreme Court of Oklahoma seeking a writ of prohibition against the enforcement of the unitization order by the Corporation Commission (R. 1-14). The appeals and the original action for prohibition were consolidated in such court (R. 16) and there fully briefed, argued and considered by the Supreme Court of Oklahoma in respect to all of the matters raised on appeal to this court. The Supreme Court of Oklahoma on March 20, 1951, handed down its opinion and decision in the consolidated cases, sustaining the Oklahoma unitization law and the order of the Commission relating to the West Cement Medrano Pool made pursuant thereto and finding that said order was fully sustained by the evidence (R. 28-56). Petition for rehearing was thereupon filed by appellants herein and denied (R. 78-130).

The cases now come to this court on appeal from the judgment and final action of the Supreme Court of Oklahoma.

The appellees in this court consist of the Corporation Commission of Oklahoma and owners of oil and gas leases upon and covering 94 per cent of the unitized area who favor the unitization of the pool pursuant to the order of the Corporation Commission.

The appellants herein are the lessees of approximately 4 per cent of the unitized area and royalty owners who are but a small part of the "several hundred royalty owners" found by the Commission (R. 1244) to own royalty

interests within the Unit Area. As further stated by the Commission in its order (R. 1241), a number of other royalty owners urged upon the Commission that the petition be granted.

Other Units

Attention is called to the fact that the particular unit here under consideration is not the only unit that has been created pursuant to the Oklahoma unitization law and that may be affected by the decision herein. In addition, thirteen other units have been so created by orders of the Corporation Commission pursuant to the same law, following substantially the same procedure and the same pattern as was followed in the case of the West Cement Medrano Unit. Several of the units so created embrace some of the larger and more active oil fields in the state, such as the West Edmond Hunton Lime Unit consisting of 30,000 acres, the Southwest Antioch Gibson Sand Unit embracing 7,500 acres, the Elk City Hoxbar-Conglomerate Sand Unit embracing approximately 4,500 acres, the Northeast Elmore Third Deese Sand Unit embracing 4,240 acres, *et al.* Several other such units have been created or are now in the process of being created or enlarged under the unitization law as subsequently amended by the 1951 Legislature.

Subsequent to the judgment in the cases from which these appeals are taken, the Supreme Court of Oklahoma in the cases of *Spiers* v. *Magnolia Petroleum Company, et al.*, October 23, 1951, Vol. 22, Okla. Bar Journal, pp. 1577, 1583, 1584, again sustained the validity of the law as well

as the sufficiency of orders of the Corporation Commission creating the Chitwood Spiers Sand Unit and the Chitwood Cunningham Sand Unit in Grady County, Oklahoma.

SUMMARY OF ARGUMENT

Point I.

House Bill 339 providing for unitized operation of separately owned tract within a common source of supply of oil and gas is a proper and reasonable exercise of the Police Power.

A. Unit operations necessary to proper use and control of reservoir energy and greatest recovery of oil and gas. Cited is a substantial amount of source material and court decisions showing that an oil and gas reservoir is inherently and by nature a single unit and that in order to properly operate the same, to recover the greatest quantity of oil and gas therefrom and to properly protect the correlative rights of the several owners, it is necessary that the same be operated as a unit. Included is the citation of the opinion in the case of *Burford* v. *Sun Oil Company* (1943), 319 U. S. 315, wherein this court said, "For these, and many other reasons based on geologic realities each oil and gas field must be regulated as a unit for conservation purposes." The point is made that an oil and gas reservoir is a "common source of supply", that the reservoir energy therein is "owned in common", and that the oil and gas constitutes a common fund", authorities being cited for each such statement.

B. Purposes of Act within scope of State's Police Power. Cited are the oil and gas conservation and correla-

tive rights cases by this court, commencing with *Ohio Oil Company* v. *Indiana*, (1900), 177 U. S. 190, down to *Cities Service Gas Company* v. *Peerless Oil and Gas Company* (1950), 340 U. S. 179. Although unnecessary to so decide in this case inasmuch as the statute and order under consideration have to do both with conservation and adjustment of correlative rights, it is pointed out that under the cases cited, the authority of the state in the exercise of the police power extend not only to matters of conservation and the adjustment of correlative rights in relation thereto, but also to the adjustment of the correlative rights of the owners of a common source of supply of oil and gas separate and apart from any question of conservation. Cited as further support for the statement just made is the opinion of Justices Rutledge, Black, Murphy and Burton in *Republic Natural Gas Company* v. *Oklahoma* (1950), 334 U. S. 62.

C. Unitization of separately owned tracts within common source of supply of oil and gas is recognized means of accomplishing purposes within Police Power. Cited are the cases of *Hunter* v. *McHugh* (1943), 320 U. S. 222; *Patterson* v. *Stanolind Oil & Gas Company* (1940), 305 U. S. 376; and *Ramsey* v. *City of Oxford* (1929), 280 U. S. 563, sustaining the authority of the state, or a city in the *Ramsey* case, in the exercise of their police power to require the unitization and unitized operation of separately owned tracts within a common source of supply for purposes within the police power. So far as the constitutional questions and the effect on the property rights and contracts of the several owners are concerned, there is no difference whatever between the operation and effect of unitization

and unitized operation of separately owned tracts within a drilling or spacing unit or a city drilling block on the one hand, and the unitization and unitized operation of some larger segment of the common source of supply on the other. The only difference is the size of the unit area and the number of tracts involved. Both involve identically the same operating problems.

D. Unitization and unitized operation of separately owned tracts authorized under Principles of Swampland, Irrigation, Mill Dam, and similar cases. Cited are the cases of *Wurts* v. *Hoagland* (1885), 114 U. S. 606; *Head* v. *Amoskeag Manufacturing Company* (1883), 113 U. S. 9; *Fallbrook Irrigation District* v. *Bradley* (1896), 164 U. S. 112, and cases to the same effect holding that it is within the power of the state where adjoining property or other rights are held by various persons in severalty, and in the improvement of which all have a common interest, that the law will provide a way whereby they may compel one another to submit to measures necessary to secure the full improvement and enjoyment thereof through joint effort and expense. There is a striking analogy between the necessity for the application of such principles to the drainage of privately owned swamplands, the irrigation of privately owned arid lands, and the creation of other types of conservancy and improvement districts, and that of the common source of supply of oil and gas which cannot be fully and properly developed and the greatest recovery obtained therefrom without the joint or unitized effort of the several owners and at their joint expense. In the cited cases the means adopted to accomplish such purpose was the creation of the long recognized drainage,

irrigation or like type of district. The unit provided for under the Oklahoma unitization law is no different from a drainage or irrigation district in design and purpose except that it is called a unit instead of a district.

E. Numerous other states have laws providing for unitization of separately owned tracts within a common source of supply. Cited are the laws of Arkansas and Louisiana, which provide for compulsory field-wide unitization of common sources of supply of oil and gas. The Louisiana law, in particular, has been made applicable to a number of the larger and more important fields in the state. Only one such order has been taken to the Supreme Court of the state and was there sustained in the case of *Crichton* v. *Lee* (1946), 209 La. 561, 25 So.2d 229. Reference is also made to the fact that a large number of the oil producing states have laws providing for the compulsory pooling and unitized operation of separately owned tracts within spacing or well drilling units. The laws in the other states are not cited as a reason for upholding the validity of the Oklahoma law except as showing that unitization of properties for oil and gas purposes is an accepted practice.

F. Provisions and requirements of House Bill 339 are reasonable. Analysis of the law shows that it conforms in all respects to due process by way of providing a full and complete hearing in respect to all matters, a full and complete review in the courts on appeal, and adequate safeguards to protect against abusive action by the unit in its unitized operation of the properties affected. Contrary to the statement of appellants, the Act does not arbitrarily turn over to any particular lessee or group of

lessees, large or small, integrated or nonintegrated, or other private persons, the right at will to dictate the manner and method in which a pool shall be unitized and operated, the property to be included, the apportionment of the unit production, or the operation of the properties of others. Instead, what is done, is done pursuant to order of the Corporation Commission, after notice and hearing, and upon such terms as the Corporation Commission prescribes. It is pointed out that the operation of the unitized properties is not by lessees as private persons but by the unit, which under the law is made "a body politic and corporate", a public corporation performing functions of government. This court in the case of *Fallbrook Irrigation District* v. *Bradley* (1896), 164 U. S. 112, upheld the power of the states to create such agencies of government consisting of interested property owners and to prescribe the powers with which they shall be endowed. The court in that case said that the officers of such a public corporation are public officers. It is pointed out how that in the management of the unit every lessee, whether he be a petitioner or not, has a voice in proportion to the interest of such lessee in the unit. Once the unit is organized, former reasons for differences cease to exist inasmuch as all then have only a common purpose, working in cooperation to recover the greatest possible volume of oil and gas from the common source of supply under and in accordance with the best and most efficient engineering and operating practices. There is nothing in the unitization law that takes away from the Corporation Commission its continuing jurisdiction under the general conservation laws, which jurisdiction was specifically reserved in the Commission by

the order in respect to the West Cement Medrano Unit (Paragraph 4 of Order, R. 1249).

G. Being within the scope of the Police Power, debatable questions of reasonableness, wisdom or propriety of the Act are for the Legislature, not the courts. Cited are the cases of *C. B. & Q. Railway Company* v. *McGuire* (1910), 219 U. S. 549; *McLean* v. *Arkansas* (1908), 211 U. S. 539; *Standard Oil Company* v. *Marysville* (1929), 279 U. S. 582; *Cities Service Gas Company* v. *Peerless Oil & Gas Company* (1950), 340 U. S. 179, and cases to the same effect.

Point II.

Provisions of the law requiring that petition be filed by designated percentage of interest of lessees and providing that proceeding be dismissed on protest of a certain percentage are not an unlawful delegation of legislative authority to private parties.

Under the decisions in *Currin* v. *Wallace* (1939), 306 U. S. 1; *Miller* v. *Schoene* (1928), 276 U. S. 272; *Doty* v. *Love* (1935), 295 U. S. 64; *Fallbrook Irrigation District* v. *Bradley* (1896), 164 U. S. 112; *United States* v. *Rock Royal Co-operative* (1939), 307 U. S. 533; *Parker* v. *Brown* (1942), 317 U. S. 341; and *Booth* v. *Indiana* (1915), 237 U. S. 391, the vesting in a percentage or class of private parties the exclusive right to institute some proceeding, or provision that the action of an agency of government be made subject to approval of a percentage or class of persons affected, is but a procedural step or condition prescribed by the legislature as a condition to the exercise of its legislative will and does not amount to the

delegation to such parties of legislative authority where if anything is to be done, it is done by or under the supervision of a governmental agency, and particularly where the right of judicial review is provided. In the case of the creation of a unit under Oklahoma House Bill 339, the petitioners are given no authority to impose their will upon the minority. If anything is done, it is done by or pursuant to order of the Corporation Commission, whose action is made subject to review on appeal by the Supreme Court of Oklahoma.

The cases of *Eubank* v. *City of Richmond* (1912), 226 U. S. 137; *Carter* v. *Carter Coal Company* (1936), 298 U. S. 238; and *Washington ex rel. Seattle Title & Trust Company* v. *Roberge* (1928), 278 U. S. 116, have no application inasmuch as in those cases the statutes or ordinances gave to a percentage or a class of persons the right, at their will and without any other legislative standard being provided, of saying what should be done with respect to the conduct, rights or property of a minority. No discretion or supervisory action of any kind by any agency of government was involved. No hearings were provided for. There was no right of appeal. These cases are expressly distinguished in the case of *Currin* v. *Wallace*.

Point III.

The procedural and other rights granted the lessees as distinguished from the lessors or royalty owners do not deny to the lessors or royalty owners the equal protection of the law.

The problem is merely one of reasonable classification of persons affected. The states have the power to

classify and treat differently parties and objects affected thereby so long as there is reasonable basis for such classification in respect to the lawful objects to be accomplished. Every presumption is in favor of the validity of the legislation and the reasonableness of the classification, and the burden is on the party attacking the same to show the lack of reasonable basis therefor. The reasons for classifying and treating differently oil and gas lessees and the lessors are obvious, some of which are that the lessee by its lease contract is given the right and is charged with the responsibility of the development and operation of the leased premises; the lessee is the one that has the geological, engineering and operating staff and is in the better position to know what should or should not be done from the standpoint of competitive or unit operations of properties in a common source of supply; the lessee is the one required to advance and pay the cost of the project; the lessee has the greater quantum of interest, namely, seven-eighths as compared with one-eighth; the lessor or royalty owner normally and usually does not have the technical staff or operating knowledge to know what should or should not be done in respect to the operation of oil and gas properties; and as a rule, the lessors are scattered throughout the United States.

All of the rights given to a lessee under House Bill 339 and not extended to lessors are rights in respect to which the lessee, as distinguished from the lessor, is in a position to know best what should be done. Certainly the class of persons who are called upon to pay the cost of the project are entitled to consideration not extended those who are not so called upon to defray such cost.

So far as participating in the hearing and pointing out to the Commission what should go into its order and the plan of unitization, or the right of appeal, is concerned, the royalty owners under House Bill 339 have every right granted the lessee.

Point IV.

Order and Plan of Unitization are reasonable and are supported by the evidence.

Pointed out is the fact that appellants' real objection on this score is one of evidence. Although it is assumed that under the decisions of this court in *Milk Wagon Drivers Union* v. *Meadowmoor Dairies* (1940), 312 U. S. 287, 294, *Pennekamp* v. *Florida* (1946), 328 U. S. 331, and *Railroad Commission of Texas* v. *Rowan & Nichols Oil Company* (1940), 310 U. S. 573, this Court will rely upon the findings of fact and the determination by the Corporation Commission of what is reasonable, as affirmed by the Supreme Court of Oklahoma, nevertheless under this Point, reference is made to sufficient evidence in the record to show that the challenged findings of fact by the Commission are supported thereby and that the order is not contrary to the undisputed evidence.

Point V.

The enactment of Senate Bill 203 by the 1951 Oklahoma Legislature amending House Bill 339 has no effect in this case.

This Point has no material bearing in this case except to eliminate confusion as to the effect of such amendment. The Supreme Court of Oklahoma has determined

that Senate Bill 203 is but a re-enactment and continuation of House Bill 339, with certain amendments, and has no effect on the rights of the parties in this case. Being an interpretation of the operation and effect of a state law, it is conclusive here. The amendment does not indicate a question in the minds of the Oklahoma Legislature as to the "legal" sufficiency of the law prior to amendment. It is significant, however, to demonstrate that after six years of experience under House Bill 339, under which fourteen units have been created, the state has through its Legislature redeclared its purpose and policy of fostering unitized operation of oil and gas pools by the enactment of the amended unitization law.

ARGUMENT

Point I.

House Bill 339 providing for unitized operation of separately owned tracts within a common source of supply of oil and gas is a proper and reasonable exercise of the Police Power of the State.

A. Unit operations necessary to proper use and control of reservoir energy and greatest recovery of oil and gas.

The technical reports, reports of investigation by governmental agencies, articles, court decisions, and other sources of authority cited in the Appendix to this brief leave no doubt that in fact and on the basis of sound engineering, a common source of supply or reservoir of oil and gas is the natural and proper unit of operation and that the operation thereof as a unit is necessary to a full and proper use of the reservoir energy, the greater re-

covery of oil and gas therefrom and the full protection of the coequal rights of the several persons having the right to produce or share in the production therefrom. The unitized control and operation of an oil and gas reservoir is the recognized scientific way in which an oil and gas reservoir should be operated.

Such facts have long been recognized by the courts.

This court in the case of *Burford* v. *Sun Oil Company* (1943), 319 U. S. 315, 318, in discussing the "unit" characteristics of an oil reservoir and the functions of the gas and gas energy therein as related to the production of oil, said:

> "Oil exists in the pores and crevices of rock and sand and moves through these channels. A large area of this sort is called a pool or reservoir and the East Texas field is a giant pool. The chief forces causing oil to move are gas and water, and *it is essential that the pressures be maintained at a level* which will force the oil through wells to the surface. As the gas pressure is dissipated, it becomes necessary to put the well 'on the pump' at great expense; *and the sooner the gas from a field is exhausted, the more oil is irretrievably lost.* Since the oil moves through the entire field, one operator can not only draw the oil from under his own surface area, but can also, if he is advantageously located, drain oil from the most distant parts of the reservoir. The practice of attempting to drain oil from under the surface holdings of others leads to offset wells and other wasteful practices; and this problem is increased by the fact that the surface rights are split up into many small tracts.
> * * *

*"For these, and many other reasons based on geologic realities, each oil and gas field must be regulated as a unit for conservation purposes. * * *"*

And further, p. 324:

"Of far more importance than any other private interest is the fact that the over-all plan of regulation, as well as each of its case by case manifestations, is of vital interest to the general public which must be assured that the speculative interests of individual tract owners will be put aside when necessary to prevent the irretrievable loss of oil in other parts of the field" (Emphasis ours).

As early as 1900 this court, in the case of *Ohio Oil Company* v. *Indiana*, 177 U. S. 190, 202, recognized that the source of supply of oil and gas is a "common reservoir" and that what occurs in one part of the reservoir directly affects the other portions thereof. It is in that case that this court refers to the oil and gas in common reservoir as being a "common fund". The court said:

> "True it is that oil and gas, like other minerals, are situated beneath the surface of the earth, but except for this one point of similarity, in many other respects they greatly differ. They have no fixed *situs* under a particular portion of the earth's surface within the area where they obtain. They have the power, as it were, of self-transmission. No one owner of the surface of the earth, within the area beneath which the gas and oil move can exercise his right to extract from the common reservoir, in which the supply is held, without, to an extent, diminishing the source of supply as to which all other owners of the surface must exercise their rights. The waste by one owner, caused by a reckless enjoyment of his right of striking

the reservoir, at once, therefore, operates upon the other surface owners. Besides, whilst oil and gas are different in character they are yet one, because they are unitedly held in the place of deposit."

And continuing, p. 209:

"But there is a coequal right in them all to take from a common source of supply the two substances which in the nature of things are united, though separate. It follows from the essence of their right and from the situation of the things as to which it can be exerted, that he use by one of his power to seek to convert a part of the common fund to actual possession may result in an undue proportion being attributed to one of the possessors of the right to the detriment of the others, or by waste by one or more to the annihilation of the rights of the remainder. * * *"

The court in the case of *Danciger Oil & Refining Company* v. *Railroad Commission* (Texas) (1932), 49 S. W.2d 837, 842, said:

"To make each well or each lease a unit of regulation and the validity of a general order dependent upon whether waste was taking place as to it would obviously render impossible the enforcement of any conservation measure, general in scope, as was contemplated by the statute. Appellant might, in the operation of its leases, under approved methods, if considered as a unit, extract without physical waste as to its particular leases the maximum amount of oil or gas recoverable therefrom. But if in doing so it causes what has come to be commonly known to that industry as 'coning,' 'water channeling,' gas dissipation, or destruction of 'reservoir energy' available to the reservoir or pool as a whole, and so trap

off and lose oil that would otherwise be recovered by the owners of adjacent lands; and so reduce the ultimate aggregate recovery from the field, waste, as contemplated by the law, would necessarily result. *No particular lease or well can therefore be taken as a unit, but must be considered in its relation to adjacent leases or wells, with a view to conserving the whole, and is subject to regulation accordingly*" (Emphasis ours).

The Supreme Court of California in the case of *People ex rel. Stevenot* v. *Associated Oil Company* (1930), 211 Cal. 93, 294 P. 717, 724, said:

"For present purposes it need only be noted that oil in this state is found under layers of rock in a sand or sandstone formation termed a lentille or 'lentil,' under pressure caused by the presence of natural gas within the formation. The layers of rock thus form a gas-tight dome or cover for the oil reserve. The oil adheres in the interstices between the sand particles. The natural gas may be in a free state at the top of the dome, but is also in solution with the oil, thus increasing the fluidity of the oil and the ease with which the oil is lifted with the gas in solution when the pressure on the gas is released by drilling into the oil 'sand.' *It is estimated that only from 10 to 25 per cent of the total amount of oil deposited in a reservoir is ultimately recovered, depending on the natural characteristics of the reservoir and the methods employed in utilizing the lifting power of the gas.* The importance of gas in the oil-producing industry has, therefore, become a question of great concern to the industry itself and to government, to the end that its function may be fully utilized without waste" (Emphasis ours).

As stated earlier in the brief, the Supreme Court of Oklahoma in the case of *Russell* v. *Walker* (1932), 160 Okla. 145, 15 P.2d 114, 117, in describing the nature and ownership of the reservoir energy in a common source of supply, said that "it is owned in common by the owners of the common source of supply." The full statement of the court is as follows:

> "That rule applies, not only to the natural gas pressure, but to the hydrostatic pressure and to all other forces combining to constitute the reservoir energy incident to or existing in the common source of supply. That reservoir energy is essential to the production of oil from the source of supply. Without it, it would be impracticable, if not impossible, to produce oil from the depth at which it is found in the Oklahoma City field. It is owned in common by the owners of the common source of supply."

The function of reservoir pressure or energy and what can be accomplished by controlled maintenance of pressure through the return of gas or water to the reservoir is described in the case of *Utilities Production Corporation* v. *Carter Oil Company* (10 C. C. A., 1934), 72 F.2d 655, 659, as follows:

> "1. *Repressuring of oil wells.* When an oil well plays out, it is not because all the oil has been recovered, but because the gas or water pressure has been exhausted. When the strata overlying an oil sand is penetrated by the drill, the gas within the formation, being under pressure, seeks the outlet, carrying with it the oil. When that pressure is gone, there is nothing left to bring the oil within reach of the pump, except gravity, the operation of which is limited to upper strata of the sand, and there counteracted by

> properties of viscosity, capillarity and adhesion of oil to its mother sand. Oil is produced by the lateral thrust of the gas pressure to the hole, and, after it quits flowing, the vertical lift of the oil to the top by a pump. Many years ago it was conceived that played-out wells could be given a new lease on life by injecting gases or liquids under pressure into the oil sands, thus starting the cycle anew. * * *".

See also *Champlin Refining Company* v. *Corporation Commission* (1932), 286 U. S. 210; *Patterson* v. *Stanolind Oil and Gas Company* (1938), 182 Okla. 155, 77 P.2d 83, 91.

The conclusion from what has been said above has been well recognized in Summers on Oil and Gas, Permanent Edition (1938), Volume 1, Section 104, an eminent authority on oil and gas law, wherein it is said:

> "In the light of all the physical facts respecting an oil and gas reservoir *there can be no doubt but that the single reservoir or pool is the natural unit of development.* Through such development many of the evils of physical and economic waste resulting from waste or inefficient use of reservoir energy, competitive drilling and overproduction may be avoided and a greater quantity of oil or gas ultimately produced from the formation. *While the desirability of this type of development may be clear, the ownership of lands by many persons within a single pool, each privileged to drill and produce oil or gas, makes unit development of the entire pool impossible, unless by voluntary agreement or legislative compulsion these interests can be merged or unitized*" (Emphasis ours).

The facts and conclusions so stated, as related to the West Cement Medrano common source of supply, are most

forcibly expressed in the findings of the Oklahoma Corporation Commission in this case.[5] In substance the Commission found that without unitization, treating such tract as a separate operating unit, there was resulting a disproportionate, inequitable and wasteful utilization and dissipation of the gas energy to the detriment and disadvantage of the other tracts and to the injury of the pool as a whole; that by best known nonunitized methods of operation not more than 25 per cent of the oil in place could be recovered; that by and through unitized management and operation of the reservoir as a unit, full use could be made of the reservoir energy and many millions of barrels of additional oil could thus be recovered, a more equitable distribution of the recoverable oil and gas could be had between the several owners and the correlative rights of the several owners more fully protected.

In fact, appellants nowhere in the record nor in their briefs, either in the court below or this court, seriously challenge the propriety and benefits to be gained by and through the unitized operation of a common source of supply of oil and gas.

Appellant, The Palmer Oil Corporation, in its brief, at page 37, says, "It may also be conceded that early unitization of an entire common source of supply of oil and gas and unit operation thereof, may result, over a period of time, in the greatest recovery of oil and gas therefrom, and, depending upon many other facts and circumstances, may be the most efficient and modern method known under present scientific information [Cit-

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5. Paragraphs 6, 7, 8, 9, 11 and 12 of Findings of Fact, Order No. 20289 (R. 1245-47) quoted in full at pages 18-22 of this brief.

ing Summers on Oil and Gas, Volume 1, Section 104]." In this connection it should be noted that by the express terms of Sectfon 4 of the law under consideration, unitization under such law can be accomplished only in those cases where the Commission finds from the evidence that the desired beneficial results are likely to result. The law does not contemplate or authorize the indiscriminate unitization of all pools.

B. Purposes of Act within scope of State's Police Power.

The purpose of the Act is clearly stated and evidenced by its provisions and the legislative declaration of policy, namely, to bring about the greater ultimate recovery of oil and gas, prevent waste and protect and adjust the correlative rights of the owners thereof.

The authority of the state in the exercise of the police power to so enact reasonable legislation for such purposes is no longer subject to question. *Ohio Oil Co.* v. *Indiana* (1900), 177 U. S. 190; *Lindsley* v. *Natural Carbonic Gas Co.* (1911), 220 U. S. 61; *Walls* v. *Midland Carbon Co.* (1920), 254 U. S. 300; *Bandini Petroleum Co.* v. *Superior Court* (1931), 284 U. S. 8; *Champlin Refining Co.* v. *Corporation Commission* (1932), 286 U. S. 210; *Thompson* v. *Consolidated Gas Utilities Corp.* (1937), 300 U. S. 55; *Patterson* v. *Stanolind Oil & Gas Co.* (1940), 305 U. S. 573; *Hunter* v. *McHugh* (1943), 320 U. S. 222; *Cities Service Gas Co.* v. *Peerless Oil & Gas Co.* (1950), 340 U. S. 179.

This court, in its latest expression, in the *Cities Service* case, last cited, said (p. 185):

"The Due Process and Equal Protection issues raised by appellant are virtually without substance. It is now undeniable that a state may adopt reasonable regulations to prevent economic and physical waste of natural gas. This Court has upheld numerous kinds of state legislation designed to curb waste of natural resources and to protect the correlative rights of owners through ratable taking, *Champlin Refining Co.* v. *Corporation Commission*, 286 U. S. 210 (1932), or to protect the economy of the state. *Railroad Commission* v. *Rowan & Nichols Oil Co.*, 310 U. S. 573 (1940). These ends have been held to justify control over production even though the uses to which property may profitably be put are restricted. *Walls* v. *Midland Carbon Co.*, 254 U. S. 300 (1920).

"Like any other regulation, a price-fixing order is lawful if substantially related to a legitimate end sought to be attained. *Nebbia* v. *New York*, 291 U. S. 502 (1934) and cases therein cited. In the proceedings before the Commission in this case, there was ample evidence to sustain its finding that existing low field prices were 'resulting in economic waste, and conductive to physical waste.' That is a sufficient basis for the orders issued."

Although it is unnecessary to so decide in this case inasmuch as the purposes involved have to do both with conservation and the adjustment of correlative rights, it is clear from the cases cited that the power of the state so relied upon extends not only to matters of conservation and the adjustment of correlative rights in relation thereto, but also to the adjustment of correlative rights of owners of a common source of supply of oil and gas separate and apart from any question of conservation.

Thompson v. *Consolidated Gas Utilities Corporation, supra; Ohio Oil Co.* v. *Indiana, supra; Bandini Petroleum Co.* v. *Superior Court, supra.* See also opinion of Justices Rutledge, Black, Murphy and Burton in *Republic Natural Gas Co.* v. *Oklahoma* (1950), 334 U. S. 62.

C. Unitization of separately owned tracts within common source of supply of oil and gas recognized means of accomplishing purposes within Police Power.

This court has recognized and held constitutional the forced unitization and unitized operation of separately owned tracts within a common source of supply to accomplish conservation of oil and gas or other purposes equally within the scope of the police power.

The case of *Hunter* v. *McHugh* (1943), 320 U. S. 222, involved a statute and order by the Commissioner of conservation of Louisiana, requiring unitized development and operation of a 640-acre drilling unit embracing a number of separately owned tracts, wherein provision was made for the development and operation thereof by one of the owners and for the sharing of the production and costs by other owners. Appellant's assignment of error in that case was "that the act and order deprive it of property without due process of law by compelling it to combine its leasehold with the land of others within the drilling unit for the purpose of gas production and to share with them its pipe line and other facilities for the production and marketing of gas, for which no compensation is provided by the act or order. Although this court did not pass on the reasonableness of the particular apportionment of

production and costs because no final order in that respect had been made, it, in respect to the constitutional question relating generally to the compulsory pooling and unitized operation of the tracts comprising the drilling unit, said (p. 227):

> "In the present posture of the record, so far as the appeal seeks to bring before us for review the judgment of the state court sustaining the constitutionality of the statute, the record presents no substantial Federal question. We have held that a state has constitutional power to regulate production of oil and gas so as to prevent waste and to secure equitable apportionment among landholders of the migratory gas and oil underlying their land, fairly distributing among them the cost of production and of the apportionment [Citing cases]."

The case of *Patterson* v. *Stanolind Oil & Gas Company* (1940), 305 U. S. 376, involved an attack, under the due process, contract and equal protection clauses of the Federal Constitution, upon the Oklahoma well spacing law and an order of the Oklahoma Corporation Commission which, like the statute and order involved in the *Hunter-McHugh* case, provided for the pooling of separately owned tracts within a well spacing unit and the apportionment of the production therefrom to the several owners on an acreage basis. This court said (305 U. S. 379):

> "In the light of our previous decisions, the plaintiff has failed to raise a substantial federal question and the appeal is dismissed for the want of jurisdiction."

The case of *Marrs* v. *City of Oxford* (1929), 32 F.2d 134, 140, certiorari denied 280 U. S. 563, involved a city

ordinance of the City of Oxford, Kansas, requiring the pooling and unitized operation for oil and gas purposes of separately owned lots within a city block. The court said:

> "We do not doubt the validity of the ordinance here challenged. Its requirements and regulations are in protection of the public welfare, effective if enforced to accomplish that purpose; and the passage and adoption of it cannot in our judgment be justly said to be an arbitrary and unreasonable exercise of the city's power. This is enough to dispose of the appeal.
>
> "But looking to the substance of things, as equity does, what are the rights of plaintiffs that will be encroached upon or denied to them by the enforcement of this ordinance? It is not the mere right to drill a well on one or two lots at great cost and stop with that, or to take the proportionate part of the oil and gas in the pool that might be said to lie under or be fairly attributed to those lots. The obvious purpose was to reach the pool as quickly as possible and take all of the oil and gas obtainable before others could get it, thus seriously encroaching upon and probably destroying the same rights of adjoining lot owners. If one or more lot owners have given a lease for which no permit is obtainable their lessee may join a lessee who has a permit in the same block on terms that are fair to both lessor and lessee. If a lot owner has not given a lease he is protected by the asking in a fair proportion of the mineral produced by a permittee. The regulations make every effort to protect, rather than to destroy rights. They extend equal opportunity to all who have an interest and eliminate the race between those having equal rights in a common source of wealth, so that some may not take all and leave others with nothing. Under the law in Kansas there is no property in oil and gas, because of their migratory nature, until they have been captured, though each

surface owner may take without limit, unless lawfully restrained. *Phillips* v. *Springfield Crude Oil Co.*, 76 Kan. 783, 92 P. 1119; *National Supply Co.* v. *McLeod*, 116 Kan. 477, 227 P. 350. This is the rule also in Pennsylvania and Indiana. The nature of this right was fully discussed and defined in *Ohio Oil Co.* v. *Indiana*, 177 U. S. 190, 20 S. Ct. 576, 44 L. Ed. 729. The court in that case, after accepting the general practice as a settled principle, that every owner of the surface within a gas or oil field might prosecute his efforts and reduce to his possession if possible all of the deposits without violating the rights of other surface owners, in the absence of regulations to the contrary, said:

"'But there is a co-equal right in them all to take from a common source of supply, the two substances which in the nature of things are united, though separate. It follows from the essence of their right and from the situation of the things, as to which it can be exerted, that the use by one of his power to seek to convert a part of the common fund to actual possession may result in an undue proportion being attributed to one of the possessors of the right, to the detriment of the others, or by waste by one or more, to the annihilation of the rights of the remainder. Hence it is that the legislative power, from the peculiar nature of the right and the objects upon which it is to be exerted, can be manifested for the purpose of protecting all the collective owners, by securing a just distribution, to arise from the enjoyment by them, of their privilege to reduce to possession, and to reach the like end by preventing waste.'

"If this right in each and all of the surface owners can be thus restrained and its exercise regulated by a law of the state enacted for the purpose, how can it be held that a valid police regulation, which incidentally and in caution embodies the same restraint

and regulation, can be made the basis of a claim that plaintiffs have a right to take all of it, and any restraint of that right violates constitutional guaranties? The basis of a statute, suggested in the Indiana case, is the governmental power to equally protect each surface owner in his right to a common fund. * * *"

Other state decisions sustaining the validity of the unitization and unitized operation of separately owned tracts of land within drilling or spacing units are *Hood* v. *Southern Production Co.* (1944), 206 La. 642, 19 So.2d 336; *Placid Oil Co.* v. *North Central Texas Oil Co.* (1945), 206 La. 693, 19 So.2d 616; *Hardy* v. *Union Producing Co.* (1945), 207 La. 137, 20 So.2d 734; *Alston* v. *Southern Producing Co.* (1945), 207 La. 370, 21 So.2d 363; *Hunter* v. *Shell Oil Co.* (1947), 211 La. 893, 31 So.2d 10; *Croxton* v. *State* (1939), 186 Okla. 249, 97 P.2d 11; *Wood Oil Co.* v. *Corporation Commission* (1951) (not yet officially reported), 139 P.2d 1023. Other decisions upholding the validity of the unitization provisions of city drilling ordinances are *Blevins* v. *Harris* (1935), 172 Okla. 90, 44 P.2d 112; *Amis* v. *Bryan Petroleum Co.* (1939), 186 Okla. 206, 90 P.2d 936; *Anderson-Kerr Drilling Co.* v. *Van Meter* (1933), 162 Okla. 176, 19 P.2d 1068; *Helmerich & Payne* v. *Roxanna Drilling Corp.* (1932), 136 Kan. 254, 16 P.2d 663; *Marblehead Land Co.* v. *City of Los Angeles* (9. C. C. A., 1931), 47 F.2d 528; *Hunter* v. *Justice's Court of Centinela Township, County of Los Angeles* (1950), 36 Cal.2d 315, 223 P.2d 465.

So far as the constitutional questions and the effect on the property rights and contracts of the several owners are concerned, there is no difference whatever between the operation and effect of unitization and unitized opera-

tion of separately owned tracts within a drilling or spacing unit or a city drilling block, on the one hand, and the unitization and unitized operation of some larger segment of the common source of supply for some reason equally within the police power, on the other. The only difference is the size of the unit area and the number of tracts involved. There is the same centralized management and operation of the tracts whatever the size or number of tracts—the same sharing of facilities—the same adjustment of lease and other contract rights—the same apportionment of production to the separately owned tracts and owners—the same distribution of costs. The same questions in respect to the due process and contract clauses of the Constitution that are here raised were raised in the well spacing and city drilling ordinance cases. Under the Constitution there is no magic in the size of the unitized area so long as the purpose is within the police power.

It follows, therefore, that if the unitization of an entire common source of supply or some substantial portion thereof is reasonably required in the proper management, development and operation thereof, to procure therefrom the greatest ultimate recovery of oil, prevent waste and to fully protect the co-equal rights of the several owners thereof, purposes clearly within the scope of the police power, no reason from a constitutional standpoint exists why legislation providing for such unitization should not be adopted the same as in the case of the unitization of the smaller spacing unit or drilling block.

D. Unitization and unitized operation of separately owned tracts authorized under Principles of Swampland, Irrigation, Mill Dam, and similar cases.

A perfect analogy exists between the need for legislation in respect to unitization and unitized operation of separately owned tracts within a common source of supply of oil and gas and that necessitating legislation in respect to the drainage of swampland; the creation of irrigation districts, the building of mill dams, and the creation of other and various types of conservation and improvement enterprises, having for their purpose the better and more beneficial development, management and enjoyment, through joint effort and expense, of adjoining privately owned lands which by reason of their natural condition cannot be fully improved and enjoyed without joint action and at joint expense.

In the case of a common source of supply of oil and gas, it is "common" to the lands overlying the same. The reservoir energy in the reservoir, as said by the Oklahoma Supreme Court in *Russell* v. *Walker* (1932), 160 Okla. 145, 15 P.2d 114, 117, "is owned in common by the owners of the common source of supply." The oil and gas in the reservoir, under the holding of this court in *Ohio Oil Co.* v. *Indiana* (1900), 177 U. S. 190, is a "common fund". What one owner does directly and materially affects all others. The owners, acting separately, cannot so produce their wells and utilize the reservoir energy so as to obtain the greatest recovery of oil and gas. Because of the migratory nature of gas or water returned to the reservoir, the owners cannot, except through unitization

and joint effort, successfully engage in or carry on pressure maintenance or repressuring operations. Acting individually, the owners can recover only about 25 per cent of the oil which nature has placed in the reservoir, whereas through joint effort twice to three times as much can be recovered. The additional oil recovered through unitized operations is like the finding of a new source of supply of oil equal in size to that of the same source of supply in the absence of unitized operation. Like in the case of drainage of swamplands, the irrigation of arid lands and the building of mill dams, the public has a very definite interest in the results of the project and in the greater recovery and conservation of the natural resource.

In the case of *Wurts* v. *Hoagland* (1885), 114 U. S. 606, this court had under consideration the validity of a New Jersey act authorizing, upon proceedings instituted "by some of the proprietors," the drainage of privately owned swamplands, over the objection of other of the owners, which by reason of the natural condition thereof could not be improved and fully enjoyed without the concurrence of all and at their joint expense. This court said (p. 613):

> "This review of the cases clearly shows that general laws for the drainage of large tracts of swamps and lowlands, upon proceedings instituted by *some of the proprietors* of the lands to compel all to contribute to the expense of their drainage, have been maintained by the courts of New Jersey, (without reference to the power of taking private property for the public use under the right of eminent domain, or to the power of suppressing a nuisance dangerous to the public health) as a just and constitutional exercise of

the power of the Legislature, to establish regulations by which *adjoining lands, held by various owners in severalty and in the improvement of which all have a common interest*, but which, by reason of the peculiar natural condition of the whole tract, cannot be improved or enjoyed by any of them without the concurrence of all, *may be reclaimed and made useful to all at their joint expense*. The case comes within the principle upon which this court upheld the validity of general Mill Acts in *Head* v. *Amoskeag Mfg. Co.*, 113 U. S. 9" (Emphasis ours).

In the case of *Head* v. *Amoskeag Manufacturing Company* (1885), 113 U. S. 9, cited in the *Hoagland* case, involved an act by the New Hampshire Legislature authorizing companies engaged in manufacturing to erect private dams along streams to create power for the operation of their mills even though by so doing, the land of upstream riparian owners was overflowed. This court, after discussing at length the various theories on which the mill dam acts and acts for the drainage of swamplands and other similar projects had been sustained, said (p. 21):

"We prefer to rest the decision of this case upon the ground that such a statute, considered as regulating the manner in which the rights of proprietors of lands adjacent to a stream may be asserted and enjoyed, with a due regard to the interests of all, and to the public good, is within the constitutional power of the Legislature.

"*When property in which several persons have a common interest, cannot be fully and beneficially enjoyed in its existing condition, the law often provides a way in which they may compel one another to submit to measures necessary to secure its beneficial enjoyment, making equitable compensation to*

any whose control of or interest in the property is thereby modified. * * *

"The statutes which have long existed in many States, authorizing the majority of the owners in severalty of adjacent meadow or swamplands to have Commissioners appointed to drain and improve the whole tract, by cutting ditches or otherwise, and to assess and levy the amount of the expense upon all the proprietors in proportion to the benefits received, have been often upheld, independently of any effect upon the public health, as reasonable regulations for the general advantage of those who are treated for this purpose as owners of a common property" (Emphasis ours).

In the case of *Fallbrook Irrigation District* v. *Bradley* (1896), 164 U. S. 112, this court, in sustaining the validity of a California law providing for the creation of irrigation districts for the irrigation and better improvement of privately owned lands, said (p. 163):

"The power does not rest simply upon the ground that the reclamation must be necessary for the public health. That indeed is one ground for interposition by the state but not the only one. Statutes authorizing drainage of swamp lands have frequently been upheld independently of any effect upon the public health, as reasonable regulations for the general advantage of those who are treated for this purpose as owners of a common property. *Head* v. *Amoskeag Mfg. Co.*, 113 U. S. 9, 22 (28:889,894); *Wurts* v. *Hoagland*, 114 U. S. 606, 611 (29:229-230); Cooley, Taxn.2d ed. p. 617. *If it be essential or material for the prosperity of the community, and if the improvement be one in which all the landowners have to a certain extent a common interest, and the improvement cannot be accomplished without the concurrence of all or nearly all of such*

owners by reason of the peculiar natural condition of the tract sought to be reclaimed, then such reclamation may be made and the land rendered useful to all and at their joint expense. In such case the absolute right of each individual owner of the land must yield to a certain extent or be modified by corresponding rights on the part of other owners for what is declared upon the whole to be for the public benefit" (Emphasis ours).

For an interesting background discussion of the principles relied upon by this court in the cases last above cited, having their origin in early common law jurisprudence, see *Fiske* v. *Mfg. Co.* (Mass.), 12 Pick. 68; *Turner* v. *Nye* (Mass.), 14 L. R. A. 478; *Lowell* v. *City of Boston*, 111 Mass. 454.

The same principles were applied by the Supreme Court of Pennsylvania in the case of *Jukman* v. *Rosenbaum* (1919), 263 Pa. 158, 106 Atl. 238, and by this court on appeal in the same case, 260 U. S. 22, 30, to a Pennsylvania act authorizing the physical invasion of the surface of adjoining lands for the purpose of erecting a party wall and providing for the mutual rights and obligations of the adjoining owners in respect thereto. The Supreme Court of Pennsylvania, in the case before it, said (106 Atl. 243):

"If it be said that the dangers from fire may be amply provided against in other ways, the answer is that, since the ordained method presents a long-established, oft-approved, and reasonably proper means to accomplish the desired purpose, which in congested districts (where, for the public welfare, it is desirable and necessary to economize land space) contributes to the common economical management of

adjoining properties, its validity as a proper measure cannot be attacked successfully.

"In connection with the thought just suggested concerning the right to use the police power of the state to work out a common scheme for the economical management of adjoining properties, see *Wurts* v. *Hoagland*, 114 U. S. 606, 611, 5 Sup. Ct. 1086, 1089 (29 L. Ed. 229), involving the constitutionality of a state law for the common drainage of adjacent lands, where Mr. Justice Gray quoting from another case, states [Here the court quotes from *Wurts* v. *Hoagland*]:

"Upon the application of this power to a land irrigation case, see *Fallbrook Irrigation District* v. *Bradley*, 164 U. S. 112, 163, 17 Sup. Ct. 56, 65 (41 L. Ed. 369), where it is said: 'In such case the absolute right of each individual owner of land must yield to a certain extent or be modified by corresponding rights on the part of other owners for what is declared upon the whole to be for the public benefit'."

This court, in affirming the case on appeal, said (260 U. S. 30):

"In the state court the judgment was justified by reference to the power of the state to impose burdens upon property or to cut down its value in various ways without compensation, as a branch of what is called the police power. *The exercise of this has been held warranted in some cases by what we may call the average reciprocity of advantage, although the advantages may not be equal in the particular case.* *Wurts* v. *Hoagland*, 114 U. S. 606, 29 L. Ed. 229, 5 Sup. Ct. Rep. 1086; *Fallbrook Irrig. Dist.* v. *Bradley*, 164 U. S. 112, 41 L. Ed. 369, 17 Sup. Ct. Rep. 56; *Noble State Bank* v. *Haskill*, 219 U. S. 104, 111, 55 L. Ed. 112, 116, 32 L. R. A. (N. S.) 1062, 31 Sup. Ct. Rep. 186, Ann. Cas. 1912A, 487" (Emphasis ours).

This court has further applied the principles so stated to an enforced composition in bankruptcy in which a number of individual creditors have a common interest. In the case of *Louisville Joint Stock Land Bank* v. *Radford* (1935), 295 U. S. 555, 585, this court said:

> "So far as concerns dissenting creditors, the composition is a method of adjusting among creditors rights in property in which all are interested. In ordering the adjustment, the bankruptcy court exercises a power similar to that long exercised by courts of law, *Head* v. *Amoskeag Mfg. Co.*, 113 U. S. 9, 21, 28 L. Ed. 889, 893, 5 Sup. Ct. 441, * * *."

The applicability of the principles so discussed under this subhead D to the operation and development of a common source of supply of oil and gas is made clear in the opinion of Justices Rutledge, Black, Murphy and Burton in the case of *Republic Natural Gas Company* v. *Oklahoma* (1948), 334 U. S. 62, 74, 90.

Although the opinion in the *Republic* case appears as a dissenting opinion, the element of dissent had to do with a jurisdictional question which the majority of the court held precluded a consideration of the case on its merits, but from the special concurring opinion by Mr. Justice Douglas, it appears that a majority of the court were in accord with the minority opinion in respect to the constitutional questions involved.

E. Numerous other states have laws providing for unitization of separately owned tracts within a common source of supply.

Oklahoma is not the only state having laws that provide for the compulsory unitization of a common source of supply. Arkansas in 1951 adopted such a law patterned somewhat after the Oklahoma statute.[6] The States of Alabama[7], Georgia[8], Florida[9], and Louisiana[10] all have laws that provide for field-wide unitization where necessary to carry on cycling operations. The Louisiana law has been applied to a number of pools in that state and was sustained by the Supreme Court of Louisiana in the case of *Crichton* v. *Lee* (1946) 209 La. 561, 25 So.2d 229, in respect to an order of unitization relating to the Cotton Valley Pool.

The States of Alabama[11], Arkansas[12], Colorado[13], Georgia[14], Florida[15], Indiana[16], Louisiana[17], Michigan[18], Mississippi[19], New Mexico[20], Oklahoma[21] and Wyoming[22]

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6. Act 134 of the General Assembly of Arkansas, 1951, p. 286.
7. Title 26, Code of Alabama 1940, Cumulative Supplement 1947, Section 179.
8. Georgia Code Annotated, Chapter 43-7, Sections 43-716, and 43-717.
9. Florida Statutes Annotated, Chapter 377, Sections 37.27 and 37.28.
10. Title 30, Louisiana Revised Statutes 1950, Sections 9 and 10.
11. Title 26, Code of Alabama 1940, Cumulative Supplement 1947, Sections 35 and 36.
12. Title 53, Arkansas Statutes Annotated 1947 and 1949 Cumulative Pocket Part Supplement, Sections 53-114 and 53-115.
13. 1951 Cumulative Supplement to 1935 Colorado Statutes Annotated, Chapter 118, Section 68(6).
14. Georgia Code, Annotated, Chapter 43-7, Sections 43-716 and 43-717.
15. Florida Statutes Annotated, Chapter 377, Sections 37.27 and 37.28.
16. Burns' Indiana Statutes Annotated, Title 60, Chapter 7, Sections 60-764 and 60-765.
17. Title 30, Louisiana Revised Statutes 1950, Sections 9 and 10.
18. Compiled Laws of Michigan 1948, Chapter 319, Section 319.13.
19. Title 23, Mississippi Code 1942 and 1948 Cumulative Supplement, Sections 6132-21 and 6132-22.
20. New Mexico Statutes Annotated 1941 and 1949 Supplement, Chapter 69, Section 69-213½.
21. Title 52, Oklahoma Statutes 1951, Section 87.1.
22. 1951 Cumulative Pocket Part Supplement to Volume 4 of Wyoming Compiled Statutes 1945, Section 57-1113.

all have laws providing for the compulsory pooling and unitized operation of separately owned tracts within drilling or spacing units.

F. Provisions and requirements of the law are reasonable.

It requires only a brief review of the Act[23] to demonstrate its reasonableness and the extent of the protection and advantages afforded the nonconsenting land and royalty owners and lessees. It limits individual rights no more than is reasonably necessary and proper to accomplish the desired objectives. Certain adjustments of property and contract rights are of course necessary.

Contrary to the statements of appellants, the Act does not arbitrarily turn over to any particular lessee or group of lessees, large or small, integrated or nonintegrated, or other private individuals, the right at will to dictate the manner and method in which a pool shall be unitized and operated, the property to be included, the apportionment of the unit production, or the operation of properties of others.

Section 4 provides that before a unit can be created, the Commission, after notice and hearing, must determine and find that to do so will reasonably accomplish the objectives of the Act and that if such is the case, the Commission shall enter its order creating the unit, but upon "such terms and conditions as may be shown by the evidence to be fair, reasonable, equitable and which are necessary or proper to protect, safeguard and adjust the respective rights and obligations of the several persons

23. See pp. 4-16 of this brief.

affected, including royalty owners, owners of overriding royalties, oil and gas payments, carried interests, mortgagees, lien claimants and others, as well as the lessees."

The range and adequacy of the hearing so provided for is evidenced by the twenty-four days of testimony in this case extending over a period of eight months and resulting in the voluminous record herein. It was no hyperbole when the Commission in its order (R. 1241) recited that "at the hearing everyone who desired to do so, regardless of the interest of such person, was given full opportunity to offer any and all competent evidence that any such person chose to offer, either for or against the recommended Plan of Unitization or by way of amendment thereto, and to otherwise be heard in regard thereto."

Section 5 requires that the *"order of the Commission"* define the unit area of the unit, limited to all or a portion of a single common source of supply, and prescribe the "plan of unitization" applicable thereto. Section 5 in detail sets out and outlines the legislative requirements and standards to guide the Commission in so defining the unit area and prescribing the plan of unitization for a particular unit. The requirements and standards in respect to the plan of unitization so set out cover every phase of unitization and unitized operation of an oil and gas pool, including, among other things, the manner and method of operation, the division of interest or formula for the apportionment or allocation of unit production, the method of financing, the initial adjustment of investment, the management of the unit, the time when the unit shall become effective, as well as when it shall end.

All that the petitioners or any group of lessees can do under the provisions of Sections 4 and 5 of the Act in respect to the formation of a unit is to file the petition and submit, for the convenience of the Commission, a recommended plan of unitization. What is done if a unit is to be created, the terms, provisions, conditions and limitations thereof, the definition and extent of the unit area, and what the plan of unitization shall provide are all determined and prescribed by the Corporation Commission after notice and hearing pursuant to the standards and guides prescribed by the Legislature.

Section 7 provides for a full, speedy and adequate review of any such order of unitization by the Supreme Court of the State of Oklahoma on appeal therefrom.

In addition, Section 7 authorizes any person, firm or corporation aggrieved by the order of the Commission or the action of a unit, to bring suit in the District Court of the county in which the unit is located to have his rights and equities determined, in connection with which the further right of appeal to the Supreme Court of Oklahoma obtains.

Sections 9 and 10 further spell out in detail the extent of the adjustment of the rights and interests of the parties resulting from and necessary to effect any such plan of unitization. Section 9 makes it clear that under no circumstances and in no event can the one-eighth part of the production constituting the normal one-eighth royalty of the landowner be chargeable with any part of the cost or expense of unit operation and that an otherwise free royalty in excess of the one-eighth can only be made

secondarily subject to such costs in the event the party who by contract is obligated to pay the same fails to do so. Even then the owner of the excess royalty who may be called upon to pay a part of the cost and expense is given full right of subrogation as against the interest of the party primarily obligated to pay the same.

A comparison of the provisions of Section 5, relating to the plan of unitization, and of Sections 9 and 10, further relating to the rights and obligations of the parties, with the more or less standard provisions of the voluntary unitization agreements prevailing throughout the oil and gas producing states in instances where unitization of pools or large areas is brought about by agreement, will show a marked similarity and will disclose that the Act under consideration does no more and goes no farther than is considered necessary where the parties are able to get together by 100 per cent agreement.

The operation of the unitized properties is not turned over to any lessee or lessees as private parties to operate as they please.

Section 9 of the Act provides that each unit so created shall be a "body politic and corporate". As such the unit is no different from the long recognized irrigation, drainage, levee, water improvement, conservancy and various other types of improvement districts. The Unit in this instance could well have been called an "oil and gas conservation district". The functions and characteristics are the same.

Thus the unit as such is a public corporation, a *quasi* municipal body, performing functions of government. Persons comprising such public corporations do not function as individuals but as public officers.

The right and authority of the states to so create such agencies of government consisting of interested property owners and to prescribe the powers with which they shall be endowed, are clearly stated by this court in the case of *Fallbrook Irrigation District* v. *Bradley* (1896), 164 U. S. 112, 174, as follows:

> "The formation of one of these irrigation districts amounts to the creation of a public corporation, and their officers are public officers. This has been held in the Supreme Court of California. *Re Madera Irrig. Dist. Bonds*, 92 Cal. 296, 14 L. R. A. 755; *People* v. *Selma Irrig. Dist.*, 98 Cal. 206.
>
> "There is nothing in the essential nature of such a corporation, so far as its creation only is concerned, which requires notice or hearing of the parties included therein before it can be formed. *It is created for a public purpose and it rests in the discretion of the legislature when to create it, and with what powers to endow it*" (Emphasis ours.).

See also *Hager* v. *Reclamation District* (1884), 111 U. S. 701, 705; *O'Neill* v. *Leamer* (1915), 239 U. S. 244, 253, 254; *Houck* v. *Little River Drainage District* (1915), 239 U. S. 254, 262-265; *Myles Salt Company* v. *Iberia Drainage District* (1915), 239 U. S. 478.

By the provisions of subparagraph (e) of Section 5 of the Act, each and every lessee within the unit area is given representation on the operating committee of the

unit and a vote equal to its proportionate interest in the unit. Each lessee, proportionate to its interest, has the same voice as does every other lessee. Those who were petitioners or proponents of the unit have no more voice in proportion to their interest than does the most violent dissenter. The appellant, The Palmer Oil Corporation, in this case is given representation on the Committee and has its voice in the management of the Unit.

Once a unit is created, prior differences as to whether the unit should have been created or as to the division of interest, etc., should not in any way affect the vote of any of the lessees on the operating committee. Once the unit is created, all have a single common purpose, namely, working in cooperation to recover the greatest possible volume of oil and gas from the common source of supply under and in accordance with the best and most efficient engineering and operating practices. This is one of the most important reasons for the success of unitized operations. Guiding the project is the combined judgment of all the lessees, having a common purpose. If The Palmer Oil Corporation is the highly efficient and commendable operator as pictured by its attorneys in this case, then through its representation on the Operating Committee it, in the interest of the public good, will contribute much to the judgment of the Operating Committee in the proper conduct of the unitized operations.

Under the law the royalty owners have everything to gain and nothing to lose, except possibly the royalty owners who in the absence of unitization are obtaining an undue proportion of the oil and gas from the common

reservoir and who under a plan of unitization receive only their fair and equitable share, The only real change in their status is that, instead of sharing to the extent of one-eighth in the limited production from a particular well or lease in the absence of unitization, they share in the same percentage in a much larger quantity of unitized production allocated to the tract or tracts in which they have an interest. There is no longer any problem of offset drainage or of the failure of individual lessees to fully and adequately develop the property. Any reasonable plan of unitization, as does the Plan of Unitization in respect to the West Cement Medrano Unit, would require the proper and efficient development and operation of the whole of the unit area in accordance with the best engineering and operating practices.

There is nothing in the unitization law that takes away from the Corporation Commission its continuing jurisdiction under the general oil and gas conservation laws as affecting operations carried on within the unit area. The Corporation Commission, by its order in this case, specifically reserved such jurisdiction in respect to the West Cement Medrano Unit and the Unit Area of said Unit (Paragraph 4 of order, R. 1249).

G. Being within the scope of the Police Power, debatable questions of reasonableness, wisdom or propriety of the Act are for the Legislature and not the Courts.

This court in *C. B. & Q. Railway Company* v. *McGuire* (1910), 219 U. S. 549, 569, said:

> "The scope of judicial inquiry in deciding the question of power is not to be confused with the scope

of legislative considerations in dealing with the matter of policy. Whether the enactment is wise or unwise, whether it is based on sound economic theory, whether it is the best means to achieve the desired result, whether, in short, the legislative discretion within its prescribed limits should be exercised in a particular manner, are matters for the judgment of the legislature, and the earnest conflict of serious opinion does not suffice to bring them within the range of judicial cognizance."

In the case of *McLean* v. *Arkansas* (1908), 211 U. S. 539, 547, this court said:

"The legislature, being familiar with local conditions, is, primarily, the judge of the necessity of such enactments. The mere fact that a court may differ with the legislature in its views of public policy, or that judges may hold views inconsistent with the propriety of the legislation in question, affords no ground for judicial interference unless the act in question is unmistakably and palpably in excess of legislative power [Citing cases]."

In the case of *Standard Oil Company* v. *Marysville* (1929), 279 U. S. 582, 584, this court tersely stated the rule as follows:

"We need not labor the point, long settled, that where legislative action is within the scope of the police power, fairly debatable questions as to its reasonableness, wisdom and propriety are not for the determination of courts, but for that of the legislative body on which rest the duty and responsibility of decision [Citing cases]."

See also *Walls* v. *Midland Carbon Company* (1920), 254 U. S. 300; *Ohio Oil Company* v. *Indiana* (1900), 177 U. S. 190; *Jacobson* v. *Massachusetts* (1905), 197 U. S. 11.

In the case of *Cities Service Gas Company* v. *Peerless Oil and Gas Company* (1950), 340 U. S. 179, 186, this court said:

> "It is no concern of ours that other regulatory devices might be more appropriate, or that less extensive measures might suffice. Such matters are the province of the legislature and the Commission."

Point II.

Provisions requiring that petition be filed by designated percentage in interest of lessees and providing that proceeding be dismissed on protest of a certain percentage are not an unlawful delegation of legislative authority to private parties.

Appellants charge that the provisions of Section 4 of the statute requiring that the petition for an order of unitization be filed "by or with the authority of, lessees of record of fifty per cent (50%) or more of the area of the common source of supply or portion thereof sought to be unitized," and the provisions of Section 6 requiring that if at any time before sixty days after the entry of the order by the Commission "lessees of record of fifteen percent (15%) or more" of the unit area shall file a protest, the proceeding shall be dismissed, constitute an unlawful delegation of legislative authority to the lessees owning the percentage of interest so named, citing *Eubank* v. *City of Richmond* (1912), 226 U. S. 137; *Carter* v. *Carter*

Coal Company (1936), 298 U. S. 238; and *Washington ex rel. Seattle Title & Trust Company* v. *Roberge* (1928), 278 U. S. 116.

Such position is without merit and the cases thus cited have no application. In each such case the statute or ordinance involved gave to a majority or a class of persons the right, at their will and without any other legislative standard being provided, of saying what should be done with respect to the conduct, rights or property of a minority. No discretion or supervisory action of any kind by any agency of government was involved. No hearings were provided for. There was no right of appeal. This court in those cases held, and rightly so, that such action was an unlawful delegation of legislative authority to private parties and thus constituted the taking of property without due process of law.

An entirely different situation exists here. The percentage provisions of Sections 4 and 6 are merely jurisdictional steps or restrictions in connection with the taking or effectiveness of action by a duly constituted governmental agency. Here, before any action can be taken that will affect a minority or a class other than that having the right to initiate the proceeding, notice and a public hearing are required, all persons affected have an opportunity to be heard, and the duly constituted public agency must determine if the statutory grounds for such action exist and the terms and conditions upon which it shall be taken, if taken, all pursuant to legislative standards in respect thereto and from which action any person aggrieved has the right of a judicial appeal.

The constitutional questions involved have been put at rest in a number of cases by this court, some of which expressly distinguish the cases relied upon by appellants in this instance.

The case of *Currin* v. *Wallace* (1939), 306 U. S. 1, involved the Federal Tobacco Inspection Act authorizing the Secretary of Agriculture to designate the markets from which tobacco sold at auction could move in commerce, but provided that such action, in each case was dependent upon the approval of a designated percentage of the "growers". This court said (p. 15):

> "So far as growers of tobacco are concerned, the required referendum does not involve any delegation of legislative authority. Congress has merely placed a restriction upon its own regulation by withholding its operation as to a given market 'unless two-thirds of the growers voting favor it.' Similar conditions are frequently found in police regulations. *Thomas Cusack Co.* v. *Chicago*, 242 U. S. 526, 530, 61 L.ed. 472, 475, 37 S. Ct. 190, L. R. A. 1918A, 136, Ann. Cas. 1917C, 594. This is not a case where a group of producers may make the law and force it upon a minority (see *Carter* v. *Carter Coal Co.*, 298 U. S. 238, 310, 318, 80 L. ed. 1160, 1188, 1192, 56 S. Ct. 855) or where a prohibition of an inoffensive and legitimate use of property is imposed not by the legislature but by other property owners (see *Washington ex rel. Seattle Title Trust Co.* v. *Roberge*, 278 U. S. 116, 122, 73 L. ed. 210, 214, 49 S. Ct. 50, 86 A. L. R. 654). Here it is Congress that exercises its legislative authority in making the regulation and in prescribing the conditions of its application. The required favorable vote upon the referendum is one of these conditions. The distinction was pointed out in *J. W. Hampton, Jr. & Co.* v.

United States, 276 U. S. 394, 407, 72 L. ed. 624, 629, 48 S. Ct. 348, where, in sustaining the so-called 'flexible tariff provision' of the Act of September 21, 1922, and the authority it conferred upon the President, we said: 'Congress may feel itself unable conveniently to determine exactly when its exercise of the legislative power should become effective, because dependent on future conditions, and it may leave the determination of such time to the decision of an Executive, or, as often happens in matters of state legislation, it may be left to a popular vote of the residents of a district to be affected by the legislation. While in a sense one may say that such residents are exercising legislative power, it is not an exact statement, because the power has already been exercised legislatively by the body vested with that power under the Constitution, the condition of its legislation going into effect being made dependent by the legislature on the expression of the voters of a certain district'."

The case of *Miller* v. *Schoene* (1928), 276 U. S. 272, involved a Virginia statute which made it the duty of the state entomologist "upon the written request in writing of ten or more reputable freeholders of any county or magisterial district" to make an investigation and to take action with respect to diseased cedar trees in conformity with certain other provisions of the act. This court said (p. 280):

"The statute is not, as plaintiffs in error argue, subject to the vice which invalidated the ordinance considered by this court in *Eubank* v. *Richmond*, 226 U. S. 137, 57 L. ed. 156, 42 L. R. A. (N. S.) 1123, 33 Sup. Ct. Rep. 76, Ann. Cas. 1914B, 192. That ordinance directed the committee on streets of the city of Richmond to establish a building line, not less than 5 nor

more than 30 feet from the street line whenever requested to do so by the owners of two-thirds of the property abutting on the street in question. No property owner might build beyond the line so established. Of this the court said (p. 143): 'It [the ordinance] leaves no discretion in the committee on streets as to whether the street [building, semble] line shall or shall not be established in a given case. The action of the committee is determined by two-thirds of the property owners. In other words, part of the property owners fronting on the block determine the extent of use that other owners shall make of their lots, and against the restriction they are impotent.'

"The function of the property owners there is in no way comparable to that the 'ten or more reputable freeholders' in the Cedar Rust Act. They do not determine the action of the state entomologist. They merely request him to conduct an investigation. In him is vested the discretion to decide, after investigation, whether or not conditions are such that the other provisions of the statute shall be brought into action; and his determination is subject to judicial review. The property of plaintiffs in error is not subjected to the possibly arbitrary and irresponsible action of a group of private citizens."

The case of *Doty* v. *Love* (1935), 295 U. S. 64, involved a Mississippi statute which permitted the reopening of closed banks upon terms proposed by three-fourths of the creditors in number or in value upon approval of the plan by the Superintendent of Banks and confirmed by the Court of Chancery. This court said (p. 70):

"The argument will not hold that the necessary operation of the statute is to subject dissenting creditors, who may be as many as one-fourth, to the

will or the whim of the assenting three-fourths. The creditors favoring reorganization, though they be ninety-nine per cent, have no power under the statute to impose their will on a minority. They may advise and recommend, but they are powerless to coerce. Their recommendation will be ineffective unless approved by the Superintendent. Even if approved by him, it will be ineffective unless the court after a hearing shall find it to be wise and just. Upon such a hearing every objection to the plan in point of law or policy may be submitted and considered. The decree when made by the Chancellor will represent his own unfettered judgment. The judicial power has not been delegated to nonjudicial agencies or to persons or factions interested in the event. Like statutes have been upheld by the courts of other states [Citing cases]."

The case of *Fallbrook Irrigation District* v. *Bradley* (1896), 164 U. S. 112, involved a California statute authorizing the creation of irrigation districts upon petition of a specified number of persons affected and giving to the supervisor and the people the right to say whether such a corporation shall be created. This court said (p. 178):

"An objection is also urged that it is delegating to others a legislative right, that of the incorporating of public corporations, inasmuch as the act vests in the supervisors and the people the right to say whether such a corporation shall be created, and it is said that the Legislature cannot so delegate its power, and that any act performed by such a corporation by means of which the property of the citizen is taken from him either by the right of eminent domain or by assessment results in taking such property without due process of law.

"We do not think there is any validity to the argument. The Legislature delegates no power. It enacts conditions upon the performance of which the corporation shall be regarded as organized with the powers mentioned and described in the act."

The case of *United States v. Rock Royal Co-operative* (1939), 307 U. S. 533, involved the provisions of Section 8c(9)(B) of the Agricultural Marketing Act of 1937 authorizing the Secretary of Agriculture to approve marketing agreements signed by "fifty per cent or more of the handlers" of certain agricultural products, or to issue orders in respect thereto in the absence of such an agreement provided such order is approved or favored by two-thirds or more of certain of the producers. This court said (p. 577):

"2. Delegation to Producers. Under § 8c(9)(B) of the Act it is provided that any order shall become effective notwithstanding the failure of 50 per cent of the handlers to approve a similar agreement, if the Secretary of Agriculture with the approval of the President determines, among other things, that the issuance of the order is approved by two-thirds of the producers interested or by interested producers of two-thirds of the volume produced for the market of the specified production area. By subsection 19 it is provided that for the purpose of ascertaining whether the issuance of such order is approved 'the Secretary may conduct a referendum among producers.' The objection is made that this is an unlawful delegation to producers of the legislative power to put an order into effect in a market. *In considering this question, we must assume that the Congress had the power to put this Order into effect without the approval of*

anyone. Whether producer approval by election is necessary or not, a question we reserve, *a requirement of such approval would not be an invalid delegation*" (Emphasis ours).

The case of *Parker* v. *Brown* (1942), 317 U. S. 341, involved the California Agricultural Prorate Act authorizing the establishment of prorate marketing plans upon petition of ten producers and after notice and hearing, conditioned further upon the subsequent approval thereof by a specified percentage of the producers in a given zone. This court said (p. 352):

> "It is the state which has created the machinery for establishing the prorate program. *Although the organization of a prorate zone is proposed by producers, and a prorate program, approved by the Commission, must also be approved by referendum of producers, it is the state, acting through the Commission, which adopts the program and which enforces it with penal sanctions, in the execution of a governmental policy.* The prerequisite approval of the program upon referendum by a prescribed number of producers is not the imposition by them of their will upon the minority by force of agreement or combination which the Sherman Act prohibits. The state itself exercises its legislative authority in making the regulation and in prescribing the conditions of its application. The required vote on the referendum is one of these conditions. Compare *Currin* v. *Wallace*, 306 U. S. 1, 16, 83 L. ed. 441, 451, 59 S. Ct. 379; *J. W. Hampton Jr. & Co.* v. *United States*, 276 U. S. 394, 407, 72 L. ed. 624, 629, 48 S. Ct. 348; *Wickard* v. *Filburn*, 317 U. S. 111, *ante*, 122, 63 S. Ct. 82" (Emphasis ours).

The case of *Booth* v. *Indiana* (1915), 237 U. S. 391, involved an Indiana statute requiring the furnishing of washrooms in mines upon the request in writing of twenty or more employees, or in case there were not so many employed, then upon the request of one-third of the employees. This court said (p. 398):

> "There remains to be considered only the contention that the law 'is, within itself, a dead letter.' And it is said that 'it *would forever lie dormant if not called into exercise and activity by the request of private persons.*' Or, as plaintiff in error otherwise expresses what he thinks to be the evil of the law, '*it is not enforceable by any power which the state government possesses, under its Constitution, or its laws enacted thereunder, but it is enforceable only upon the demand, the whim, or the election of a limited number of employees in the coal mining business.*' And it is declared that 'this is the exercise of an arbitrary power, for an arbitrary private right, and against a private business.'
>
> "We have quoted counsel's language in order to give them the strength of their own expressions of what they consider the vice of the law; but manifestly it is but a generalization from the particular objections which we have considered, and those objections we have sufficiently discussed. (Emphasis ours).
>
> "Judgment affirmed."

Under House Bill 339, if anything is to be done, it is not done by the petitioners or any percentage of the lessees. They do not impose their will upon the minority. What is done is done by order of the Corporation Com-

mission, after notice and hearing, pursuant to a policy and standards prescribed by the Legislature and subject to review on appeal. The percentage requirements in respect to the filing of a petition and the percentage of the lessees required to acquiesce, as evidenced by a failure of a designated percentage to protest, are but conditions prescribed by the Legislature to the enforcement of its will.

Point III.

The procedural and other rights granted the lessees as distinguished from the lessors or royalty owners do not deny to the lessors or royalty owners the equal protection of the law.

The provisions of Sections 4 and 6 of the statute giving to a percentage of the lessees the right to file a petition for unitization, or by protest to bring about a dismissal thereof, and the other provisions of the law and plan of unitization giving to the lessees rights in respect to the management of the unit not granted the lessors or royalty owners do not deny to the lessors or the royalty owners the equal protection of the law.

The answer is merely that of a reasonable classification of the persons so affected.

It is elementary to say that there is nothing in the Constitution that prohibits the states, in the enactment of legislation, to classify and treat differently parties and objects affected thereby so long as there is a reasonable basis for such classification in respect to the lawful objects to be accomplished. *Field* v. *Barber Asphalt Paving*

Company (1904), 194 U. S. 618; *New York Rapid Transit Corporation* v. *New York* (1938), 303 U. S. 573; *Clark* v. *Kansas City* (1900), 176 U. S. 114; *Lakeshore & M. S. Railway Company* v. *Clough* (1917), 242 U. S. 375; *Great Atlantic & Pacific Tea Company* v. *Grosjean* (1937), 301 U. S. 412; *Kotch* v. *River Port Pilot Commissioners* (1947), 330 U. S. 552; *Pacific States Box & Basket Company* v. *White* (1935), 296 U. S. 176; *Lindsley* v. *Natural Carbonic Gas Company* (1911), 220 U. S. 61.

It is equally well established that every presumption is in favor of the validity of legislation and the exercise by the state of its police power and that the burden is on persons attacking the same to show wherein the facts do not warrant the same or warrant the classification by the state of the persons or objects affected. *Pacific States Box & Basket Company* v. *White* (1935), 296 U. S. 176; *Corporation Commission* v. *Lowe* (1930), 281 U. S. 431; *Lindsley* v. *Natural Carbonic Gas Company* (1911), 220 U. S. 61; *Bradley* v. *Richmond* (1913), 227 U. S. 477; *Alaska Packers Association* v. *Industrial Accident Commission* (1935), 294 U. S. 532.

This court in the case of *Pacific States Box & Basket Company* v. *White*, *supra*, said (p. 185):

> "When such legislative action is called in question, if any state of facts reasonably can be conceived that would sustain it, there is a presumption of the existence of that state of facts, and one who assails the classification must carry the burden of showing by a resort to common knowledge or other matters which may be judicially noticed, or to other legitimate proof, that the action is arbitrary."

The differences between the position and interests of the lessees on the one hand and of the lessors or royalty owners on the other are obvious. Some of such differences are:

(a) The lessee by its lease contract is given the right and is charged with the responsibility of the development and operation of the leased premises. The unitized development, management and operation of a common source of supply is functionally an operating problem.

(b) The lessee is the one that has the geological, engineering and operating staff and is thus in the better position to know what should or should not be done from the standpoint of competitive or unit operation of properties in a common source of supply.

(c) The lessee is the one that, under the unitization law and any plan of unitization prescribed thereunder, is required to advance the money and defray the cost and expense of the project. The persons paying the cost of the project should have a greater voice.

(d) The lessee has the greater quantum of interest in respect to the production from the leased premises, namely, seven-eighths as compared with one-eighth.

(e) The lessor or royalty owner normally and usually does not have the technical staff or operating knowledge to know what should or should not be done in respect to matters of operation and of unitization.

(f) The royalty owners are, as a rule, scattered and do not generally have first-hand information as to the status of individual wells or the engineering or geological

conditions prevailing with respect to the area sought to be unitized.

As was said by the Supreme Court of Oklahoma in its opinion in this case (R. 41):

> "The distinction between the lessee and the royalty owners as classes in interest and the reason why the Legislature should extend the privilege so responsible to one and not the other is so manifest that it precludes any idea that in so doing the legislative act was capricious."

Except for the right of a designated percentage of the lessees to file the petition or of a designated percentage of the lessees to bring about a dismissal thereof by the filing of protests, absolutely no distinction is made as between the lessees, lessors or royalty owners in the hearing before the Corporation Commission on such a petition. All have the same right to appear and be heard, and in the making of any order pursuant thereto the Commission by Section 4 of the law is required to make the same "upon such terms and conditions as may be shown by the evidence to be fair, reasonable, equitable and which are necessary or proper to protect, safeguard and adjust the respective rights and obligations of the several persons affected, *including royalty owners, owners of overriding royalties, oil and gas payments, carried interests, mortgagees, lien claimants* and others, as well as the lessees." All have the same right of appeal.

In the particular case now before the court, as shown by the record herein, the nonconsenting royalty owners have been given every consideration both before the Cor-

poration Commission and before the Supreme Court of Oklahoma on appeal.

Point IV.

Order and Plan of Unitization are reasonable and are supported by the evidence.

Considered under this Point will be the contentions of appellants that the West Cement Medrano Pool is not a common source of supply and that the order of the Commission and certain provisions of the Plan of Unitization, including the division of interest, are unreasonable. The contentions of appellants are here so grouped because all involve an evidentiary review of the Commission's express findings of fact and its determination of what is fair and reasonable.

There is no foundation for appellants' statements that the findings of fact of the Commission are contrary to the undisputed evidence. Its findings of fact and determination of what is fair and reasonable are supported by an abundance of testimony. The most that appellants can claim is that in certain respects there was conflicting evidence. The same fact questions and questions as to the reasonableness of the Commission order presented here were presented to and determined adversely to appellants by the Supreme Court of Oklahoma in its decision herein appealed from (R. 28-56).

In regard to a further independent review of the evidence, this court, in the case of *Milk Wagon Drivers Union* v. *Meadowmoor Dairies* (1940), 312 U. S. 287, 294, said:

"It is not for us to make an independent valuation of the testimony before the master. We have not only his findings but his findings authenticated by the state of Illinois speaking through her supreme court. We can reject such a determination only if we can say that it is so without warrant as to be a palpable evasion of the constitutional guaranty here invoked. The place to resolve conflicts in the testimony and in its interpretation was in the Illinois courts and not here. To substitute our judgment for that of the state court is to transcend the limits of our authority."

In the case of *Pennekamp* v. *Florida* (1946), 328 U. S. 331, 345, this court said:

"While the ultimate power is here to ransack the record for facts in constitutional controversies, we are accustomed to adopt the result of the state court's examination."

In respect to this court substituting its judgment for that of a state regulatory agency as to what is reasonable and proper in respect to oil and gas matters peculiarly within the knowledge of the regulatory agency, this court, in the case of *Railroad Commission of Texas* v. *Rowan & Nichols Oil Company* (1940), 310 U. S. 537, 580, wisely said:

"A controversy like this always calls for fresh reminder that courts must not substitute their notions of expediency and fairness for those which have guided the agencies to whom the formulation and execution of policy have been entrusted."

And again on rehearing in the same case, 311 U. S. 570, 575:

"For its own good reason Texas vested authority over these difficult and delicate problems in its Rail-

road Commission. Presumably that body, as the permanent representative of the state's regulatory relation to the oil industry equipped to deal with its ever-changing aspects, possesses an insight and aptitude which can hardly be matched by judges who are called upon to intervene at fitful intervals."

Because of the views expressed by this court in the cases last cited, appellees will not indulge in a lengthy or detailed discussion of the evidence, but will answer the contentions of appellants only to the extent necessary to show that the Commission did not act without basis in fact or under the evidence. We will limit our discussion to those particular points wherein the appellants challenge the sufficiency of the order and the evidence.

A. The Unit is a single common source of supply.

The Corporation Commission, in Finding No. 2 of its order (R. 1243) expressly found that the whole of the Medrano Sandstone underlying the Unit Area "constitutes a single common source of supply of oil and gas, all parts of which are permeably connected so as to permit the migration of oil or gas from one portion of the common source of supply to another." Although the order recites that faults are known to exist, it further finds that they are not such as to prevent substantial migration of oil and gas from one part of the common source of supply to another.

The record shows that the hearing in this case was not the first knowledge and experience of the Commission in respect to this problem. Appearing in the evidence are Exhibits 12 to 22 (R. 1345-1398, offered in evidence

R. 205), being prior orders and findings of the Commission relating thereto, dating from January 4, 1943, when the pool was first regulated by the Commission.

The prior orders recite the studies made of the pool to determine if it was a single common source of supply, culminating in Order No. 17736 dated April 10, 1945 (Exhibit 22, R. 1396) finding and determining the whole of the Medrano Sandstone formation to be "in fact one common source of supply." As disclosed by the orders, the studies so made were participated in by the Conservation Department of the Commission, the United States Bureau of Mines, as well as the operators, and involved actual well performance and bottom hole pressure tests. Order No. 16399 (Exhibit 16, R. 1366) ordered the shutting in of the gas wells for two weeks as a part of the study.

Every proration and other conservation order of the Corporation Commission relating to the West Cement Medrano Pool since its discovery, and there have been many, has been predicated on the basic fact that the pool is a single common source of supply.

The fact that the pool was a single common source of supply and that the faults known to exist were not such as to constitute impervious barriers was testified to at length by the witnesses in the case (R. 213, 237, 239-40, 317-18, 232-24, 360, 364-66, 373-74, 603-22, 730-34). Much of the intervening testimony was cross-examination involving details supporting the conclusions so reached. The witnesses were men thoroughly qualified who were acquainted with and followed the development of the field from the date of its discovery and who had participated in the field-

wide detailed study of the field looking to unitization (R. 206, 208, 229, 230-34, 427). The Commission saw the witnesses, knew their qualifications, and was in a position to appraise the competency and reasonableness of their testimony.

The evidence relied upon by appellants consists of a number of exhibits which merely show or make reference to the known faults, which for one purpose or another were used to classify the different parts of the field by fault segments. As stated in the findings of the Commission, the presence of the faults has been known, but this is far from saying that the faults constitute complete barriers separating the pool into separate common sources of supply. Several of the exhibits were made by or under the direction of the witnesses who testified in the case, who explained that the exhibits did not show what the appellants here claim they show.

B. It was not too late to accomplish beneficial results merely because approximately two-thirds of the reservoir energy had been produced or expended.

Neither common sense nor the statute arbitrarily conditions the making of an order of unitization upon any percentage or stage of depletion of reservoir energy. The criterion, set forth in Section 4 of the Act, is the added recovery of oil and gas that can be obtained by unitized methods of operation as compared with that which can be obtained in the absence of unitization.

The Commission in this respect, notwithstanding the stage of depletion of the natural reservoir energy, found:

"That by and through the unitization of the proposed Unit Area and the unitized management and operation and further development thereof as a unit, all as set out and provided for in the Plan of Unitization hereto attached, full use can be made of the gas energy in the reservoir to the mutual advantage of all the owners of the said common source of supply of oil and gas, that waste of large volumes of oil and gas can be prevented, gas can and will be returned to the reservoir to supplement the natural reservoir energy, water encroachment, either natural or artificial, on the lower side of the pool can be properly controlled and utilized, substantially more oil, amounting to many millions of barrels, can be recovered from the common source of supply than can be otherwise recovered, a more equitable distribution of the recoverable oil and gas can be had as between the several owners of the pool, and the correlative rights of the several owners can be more fully protected" [Finding No. 7, Order No. 20239, R. 1246].

The evidence in this regard was that the additional recovery as a result of the order and Plan of Unitization in this case could reasonably amount to as much as 24 to 25 million barrels, or approximately twice what could otherwise be recovered (R. 250-54, 260-73, 283-84, 851-84).

This is the equivalent of finding an entire new oil pool of comparable size and productivity to that of the pool in the absence of unitized operation.

Appellants nowhere in their briefs take issue with the findings or evidence on this score.

C. The Plan does not include acreage not proven to contain productive oil and gas.

The only contention of appellants in this regard is that wells have not been drilled on all of the tracts and that in one or two instances tracts were included on which wells referred to by them as dry holes had been drilled.

The Commission, however, after hearing all the evidence, found (Finding No. 2, R. 1243) that the whole of the Medrano Sandstone underlying the unitized area was a part of and constituted the Medrano common source of supply, was oil and gas bearing, and that (Finding No. 4, R. 1244) the limits thereof were reasonably defined by drilling operations.

The actual drilling of wells on every man-made subdivision of land is not necessary to prove that an oil and gas bearing formation exists under such tract of land. This can be proven by drilling around the different tracts. Likewise the drilling of an uneconomical or so-called dry hole at a particular spot does not condemn an entire tract nor prove that the tract is not underlain with oil and gas that can be recovered by unitized operations. One of the advantages of unit operations is the recovery for the benefit of the landowners of oil that cannot otherwise be recovered.

There was an abundance of testimony that all of the tracts included within the Unit were a part of the common source of supply and underlain by oil and gas producible therefrom (R. 209, 238-39, 297-98, 407-8, 510-17, 566-72, 597-98). It was clear from the testimony that Exhibits 54R and 56R (R. 1496, 1500), geologic maps relied

upon by all parties throughout the hearing, reflected the answer to the question of the productive limits of the common source of supply. Both Mr. C. H. Keplinger and B. T. Murphree, engineers testifying on behalf of the protestants before the Commission, the appellants here, acknowledged the reasonable accuracy and reliability of such exhibits (R. 963, 1116-17).

D. The division of interest is fair and reasonable.

The Commission in this regard found:

> "* * * that the division of interests set forth in 'Exhibit B' attached to said Plan of Unitization pursuant to which the unit production is to be apportioned and allocated among and to the several separately owned tracts within the Unit Area is fair and equitable and is such as will reasonably permit persons otherwise entitled to share in or benefit by the production from such separately owned tracts to receive, in lieu thereof, their fair, equitable and reasonable share of the unit production or other benefits thereof; that the division of interest assigned to the several separately owned tracts in the Unit Area as set out in said 'Exhibit B' to said Plan of Unitization is fair and reasonably representative of the value of said several tracts for oil and gas purposes and the contributing value thereof to the unit in relation to like values of other tracts in the unit; that the basis used to arrive at said division of interest takes into account the acreage of the several separately owned tracts, the quantity of oil and gas recoverable therefrom, the location thereof on structure, the probable productivity of oil and gas from such tracts in the absence of unitization, the burden of operation to which such tracts will or are likely to be subjected, together with

all other pertinent engineering, geological and operating factors as are reasonably susceptible of determination; * * *" [Finding No. 11, R. 1247].

Appellant, The Palmer Oil Corporation, simply by statement says that the division of interest so established is objectionable (its brief, pp. 73-74) because (a) it fails to attribute to the Palmer interest in the Palmer-Sterba lease credit for oil which it claims could have been drained from below 6,000 feet, which had been reserved to Gulf Oil Corporation by its contract with The Palmer Oil Corporation (Exhibits 34 and 35, R. 1477, 1527); (b) it fails to compensate The Palmer Oil Corporation for the risk incurred in drilling dry holes on the lease; (c) it gave Palmer no special consideration because of its "commendable qualities" as an operator nor to comparative lifting costs as between leases; and (d) the alleged inaccuracy of certain of the technical factors used to arrive at the division of interest.

The argument of appellants in these respects is too inconsequential to call for a detailed answer. Suffice it to say that the record discloses that 50 per cent or more of the testimony and other evidence was given over to a detailed and careful consideration of the various steps used to arrive at the percentage of participation or the division of interest, as it is variously called, including all of the considerations raised by appellants. Perhaps the most condensed portions of the evidence relating thereto are to be found at record pages 290-316, 567-572, 618-690, 705-722. It was uncontradicted that the procedures and formula so used to arrive at the division of interest were

in accordance with sound and accepted geological and engineering practices (R. 313, 315, 863).

The fact that the formula and procedures so used may not be made with mathematical nicety or in exact quality is no objection. *Lindsley* v. *Natural Carbonic Gas Company* (1911), 220 U. S. 61, 78.

The provisions of the Plan of Unitization prescribing the vote by which action of the Operating Committee of the Unit shall be taken (Paragraph VIII of Plan of Unitization, R. 1250, 1258-1262) are necessary and reasonable. As pointed out under subhead F of Point I of appellees' argument herein, the Unit so created by the order of the Commission is "a body politic and corporate", a *quasi* municipal body, performing functions of government. It is only proper that the authority creating such a body prescribe how and by what means it shall function. Subparagraph (e) of Section 5 of the law specifically provides for an Operating Committee to manage its affairs. The members of the committee as such do not act as individuals but as *quasi* public officers. It is usual and customary that any board, agency, industry committee or other group performing functions of this kind act as a body pursuant to a vote of less than the whole. All have a vote. Furthermore, the action of the Operating Committee in this instance is circumscribed and controlled by the detailed provisions of the Plan of Unitization prescribed by the Corporation Commission (R. 1250-1300). The Plan of Unitization itself fixes the division of interest and how the unit production is to be allocated, how the costs are to be paid and apportioned, the accounting procedure, how the investment is to be adjusted, what the method of op-

eration shall be, and all matters of major importance. In instances where discretion is left to the Operating Committee, standards to guide the committee are stated. The Plan of Unitization itself sets out clearly how the Unit is to be carried on and shall function.

Perhaps the greatest evidence of the fairness and reasonableness of the Plan of Unitization prescribed by the Commission is not only the fact that the Commission itself, familiar with the pool and familiar with the subject matter with which it was dealing, adopted it after twenty-four days of evidence in which the protestants, appellants here, raised every point of objection here presented, but the further fact that twelve lessees in the field, some little, some big, some corporations, some individuals, some owning leases in one end of the field, some in the other, some owning only leases in the gas cap, others owning leases only in the oil zone, in all owning leases on 94 per cent of the Unit Area, are subscribers thereto. (R. 286) and, in addition, the Supreme Court of Oklahoma, after reviewing the evidence, approved the same. It is interesting to note that the protesting lessees, who have refused to subscribe to the Plan, likewise refused to join in the study of the facts in the first instance to determine whether or not unitization would result in a substantially greater recovery of oil for the advantage of all concerned, or to work with the other lessees in their endeavor to work out a fair and reasonable plan of unitization to recommend to the Corporation Commission (R. 288).

The thing that is most noteworthy about the whole of appellants' attack on the reasonableness of the order and the sufficiency of the evidence to sustain the same is

the relative insignificance of the points so raised as compared with the great benefits and importance of the overall project.

Point V.

The enactment of Senate Bill 203 amending House Bill 339 has no effect in this case.

The interpretation by the Supreme Court of Oklahoma (R. 1536-38) was that the enactment of Senate Bill 203, May 26, 1951, by the 1951 Oklahoma Legislature[24] was but a re-enactment and continuation in effect of House Bill 339, with certain amendments, and has no effect on the rights of the parties in this case. Being an interpretation of the operation and effect of a state law, it is conclusive here. In fact, appellants, except for one or two loose statements, do not contend otherwise.

The conclusion by the Supreme Court of Oklahoma in such regard is but a statement of the universal rule that where, as here, a statute is repealed and all or some of its provisions are at the same time re-enacted, the re-enactment is considered a reaffirmance of the old law and a neutralization of the repeal, so that the provisions of the repealed act which are thus re-enacted continue in force without interruption, and all rights and liabilities incurred thereunder are preserved and may be enforced, and further, that proceedings instituted under the law so repealed and re-enacted do not fall but may be continued and concluded under the new law. *Bear. Lake and River*

24. Sections 1 to 16, Chapter 3a, Title 52, Session Laws of Oklahoma, 1951, set out in full as Appendix "J", page 302, of Statement As to Jurisdiction by The Palmer Oil Corporation in Case No. 301.

Waterworks & Irrigation Company v. *Garland*, 164 U. S. 1; 50 Am. Jur., Statutes, Sec. 573, p. 538; 59 C. J., Statutes, Sec. 529, p. 927.

The amendment of the law does not in any way indicate a question in the minds of the Oklahoma Legislature as to the "legal" sufficiency of the law prior to the amendment. Such an assertion by appellants is sheer speculation. Legislative acts are amended from time to time for many and varied reasons.

The significant thing, however, is that after six years of effectiveness of House Bill 339, with the experience and knowledge gained by the creation of fourteen units thereunder, the state through its Legislature redeclared its purpose and policy of fostering the unitized operation of oil and gas pools by the enactment of the amended unitization law. The unanimity of thinking on the part of the legislative branch of the state in respect to the benefits of unitized operation of oil and gas pools is evidenced by the fact that Senate Bill 203 passed the House of Representatives by a vote of 106 to 1.

CONCLUSION

In conclusion, appellees respectfully submit that the Oklahoma unitization law and the particular order in respect to the West Cement Medrano Pool here under consideration constitute a reasonable and proper exercise of

the police power of the state and should be sustained in all respects by the judgment of this court.

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APPENDIX

APPENDIX "A"

Bibliography of Source Materials Cited Under Footnote 2, Page 4 of This Brief

1924 Annual Report of the United States Bureau of Mines, p. 31.

Report III of the Federal Oil Conservation Board to the President of the United States, February 29, 1929, pp. 10-17, 19-25, 29-30, 33-34, 40.

"Unit Operation", by George Otis Smith, U. S. Geological Survey, delivered at a group session on unit operation in connection with the Eleventh Annual Meeting of the American Petroleum Institute, November 12, 1930.

"Comparison of Competitive and Unit Operations in Cromwell and Seminole City Pools", by James O. Lewis, Consulting Petroleum Engineer, Tulsa, Oklahoma, appearing in handbook on *Unitization of Oil Pools*, published by Mid-Continent Oil & Gas Association, 1930, p. 35.

"Compulsory Unit Operation of Oil Pools", by W. P. Z. German, 17 A. B. A. J. 393, June, 1931.

Thornton Oil and Gas, 1st ed., Secs. 21, 22 and 218, 1932.

"Recycling Gas, Repressuring Oil Sands and Storing Gas in Depleted Fields, As Conservation Measures", by J. H. Dunn, Production Engineer, Dallas, Texas, presented to the Mineral Section of the American Bar Association at Cleveland, Ohio, July 25-29, 1938.

"The Conservation of Oil", by Ely. 51 Har. L. Rev. 1209, 1938.

Oil and Gas Leases and Royalties, by Samuel H. Glassmire, 2d ed., Secs. 5, 6, 7 and 11, 1938.

[APPENDIX]

Summers Oil and Gas, by W. L. Summers, Professor of Law, University of Illinois, Vol. 1, Perm. Ed., Secs. 3 and 104, 1938.

"Recent Progress in Petroleum Development and Production", by H. C. Miller and G. B. Shea, U. S. Bureau of Mines, submitted to special subcommittee on petroleum investigations of the Committee on Interstate and Foreign Commerce, House of Representatives, 66th Congress (Recess), on H. R. 7372, November 7, 1939, p. 391.

Report of Energy Resources Committee to the National Resources Committee, prepared in consultation with the several federal agencies involved and submitted to Congress February 15, 1939, by the President of the United States, Franklin D. Roosevelt, pp. 216-221.

"Engineering Aspects of Waste and Conservation in the Petroleum Industry", by R. A. Cattell, Chief Engineer, Petroleum and Natural Gas Division, U. S. Bureau of Mines, contained in report of investigation by the Temporary National Economic Committee of the 76th Congress of the United States, Part 17, Section 4, published 1940, dealing with the petroleum industry, p. 9861.

Covenants Implied in Oil and Gas Leases, by Maurice H. Merrill, Sec. 227, 1940.

Report of Engineering Committee of the Interstate Oil Compact Commission, submitted at New Orleans, April 14, 1941.

Report of Temporary Subcommittee on Secondary Recovery in Oklahoma of the Temporary Production Subcommittee for Oklahoma of the Production Committee for District No. 2 under the Petroleum Industries Committee appointed by the Petroleum Coordinator for National Defense, April 10, 1942.

"Report on Petroleum Production and Development", by H. C. Miller and Ben F. Lindsly, U. S. Bureau of Mines, submitted to special subcommittee on petroleum investigations of the Committee on Interstate and Foreign Commerce, House of Representatives, 73rd Congress, on H. R. 441, November 1, 1943, as it appears in Vol. 1 of the report of that investigation, beginning at p. 1193.

"Unitizing the Royalty Interests", by Frederick Squires, Petroleum Engineer, Illinois State Geological Survey, printed in *The Producers Monthly*, October, 1944.

"Secondary Recovery in Arkansas—A Survey", a report to the 56th General Assembly of the State of Arkansas under the auspices of the Arkansas Oil and Gas Commission, by George H. Fancher, Professor of Petroleum Engineering, University of Texas, and Donald K. Mackay, Senior Geologist, Arkansas Oil and Gas Commission, 1946, p. 245.

Staff Report of Federal Power Commission entitled, "Practices and Problems in Producing, Gathering and Processing Natural Gas", summarizing results of a nationwide investigation of the natural gas and petroleum industry during the greater part of the year 1946, Docket No. G-580.

"Report of Legal Committee of Interstate Oil Compact Commission Relating to Secondary Recovery and Related Operations", dated April 11, 1947, in Interstate Oil Compact Quarterly Bulletin, Vol. VI, No. 2, August, 1947, pp. 73-80, being a revised reprint of earlier report dated June 20, 1942.

Statement of Paul Montgomery, Petroleum Engineer, Lafayette, Louisiana, made to Interstate Oil Compact Commission with respect to unitization and unit operations in Louisiana, appearing in Interstate Oil Com-

pact Quarterly Bulletin, Vol. VI, Nos. 3 and 4, December, 1947, p. 58.

Antitrust Laws v. *Unit Operation of Oil or Gas Pools*, by Robert E. Hardwicke, 1948.

"Unit Operation of Oil and Gas Fields", by Jacobs, 57 Yale Law Journal 1205, 1948.

Unitized and Cooperative Projects in the United States, published by Interstate Oil Compact Commission, 1948. Contains lists of all unitized projects in the United States as of date of report.

Oil and Gas Productions: An Introductory Guide to Production Techniques and Conservation Methods, compiled by Engineering Committee of Interstate Oil Compact Commission, 1951.

Proceedings of First Annual Institute on Oil and Gas Law, Southwestern Legal Foundation, Dallas, Texas, 1949.

Bandini Petroleum Company v. *Superior Court* (1931), 284 U. S. 8.

Burford v. *Sun Oil Company* (1943), 319 U. S. 315, 318.

Champlin Refining Company v. *Corporation Commission* (1932), 286 U. S. 210.

Danciger Oil & Refining Company v. *Railroad Commission* (1932), 49 S. W.2d 837, 842.

Ohio Oil Company v. *Indiana* (1900), 177 U. S. 190, 202, 209.

Patterson v. *Stanolind Oil & Gas Company* (1938), 182 Okl. 155, 77 P.2d 83.

People ex rel. Stevenot v. *Associated Oil Company* (1930), 211 Cal. 93, 294 Pac. 717, 724.

Russell v. *Walker* (1932), 160 Okl. 145, 15 P.2d 114, 117.

Utilities Production Corp. v. *Carter Oil Company* (10 C. C. A., 1934), 72 F.2d 655, 659.